Textile World

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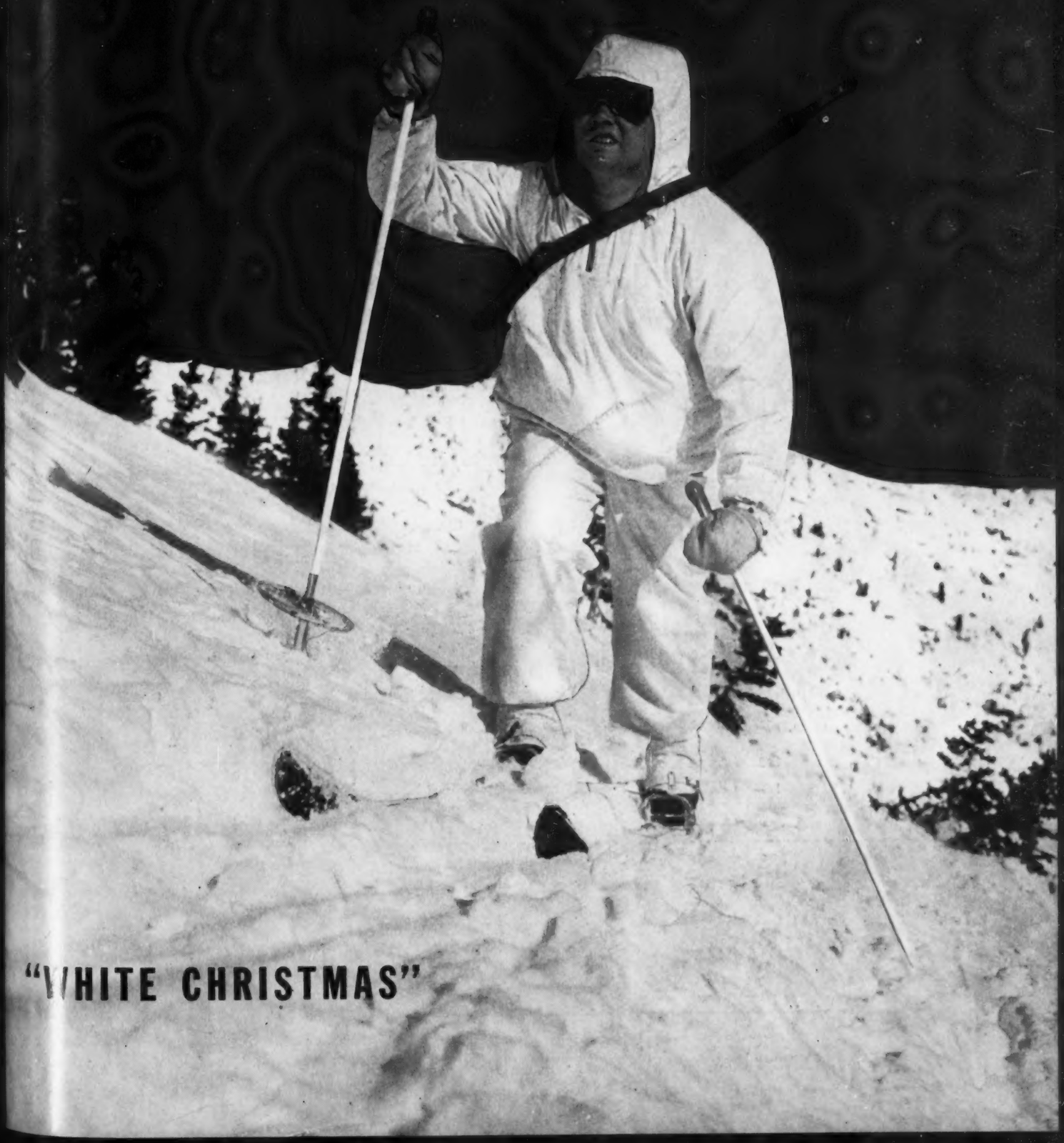

"WHITE CHRISTMAS"

A NEW JOB for an Old Client

West Point Manufacturing Company is a long-time client of ours. We have served them as architects and engineers for 25 years, on many different kinds of projects. One of the latest is shown above —a new plant at Fairfax, Alabama, for the West Point Utilization Company, the division of West Point Manufacturing Company whose special function is to process cotton waste.

Length of service to clients is a matter of pride with us; so is the fact that we are continually adding new names to our list of clients. Engineering knowledge and experience are the stock-in-trade of Robert and Company's staff. Their services on any project, large or small, assure you of economy and efficiency.

ROBERT AND COMPANY
INCORPORATED
Architects and Engineers
NEW YORK • ATLANTA • WASHINGTON

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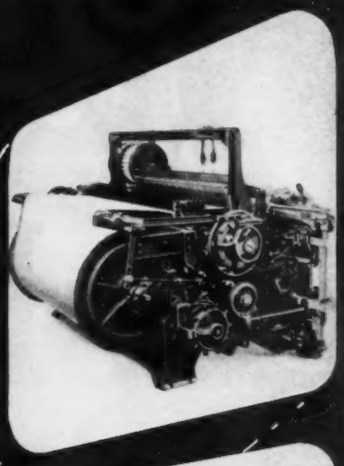
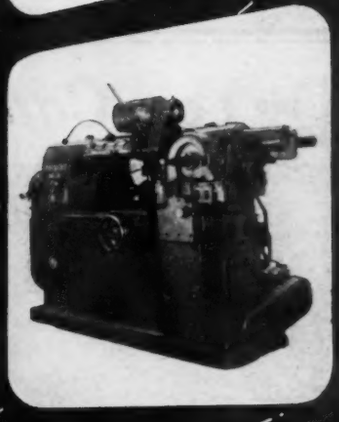
1942

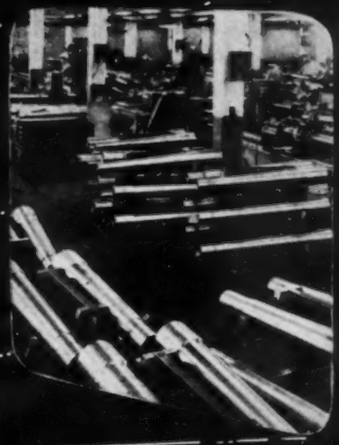
A Year of Momentous Changes in Draper Products



One Year Ago We were at Peace and our shops Were building Machines of Peace



War Threatened The Defense Program was on and We began to build Machine Tools



Pearl Harbor And our Peacetime Products were Replaced by Implements of War

After the War—Better Looms

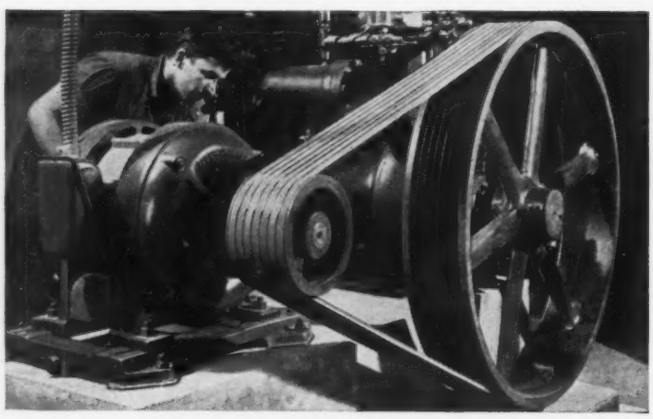
Our Present Job is to Carry On in the War Program
and to Help You Carry On by assisting you to
Keep Your Looms Running on Your War Products

DRAPER CORPORATION

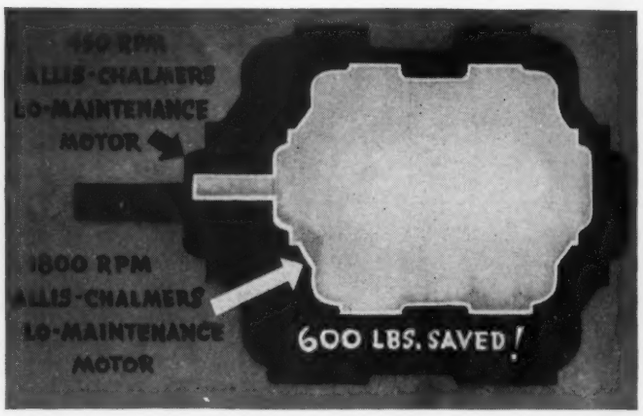
Atlanta Georgia Hopedale Massachusetts Spartanburg S C

It's Time to Look at Motor

➔*You Can Save with High-Speed Instead of*

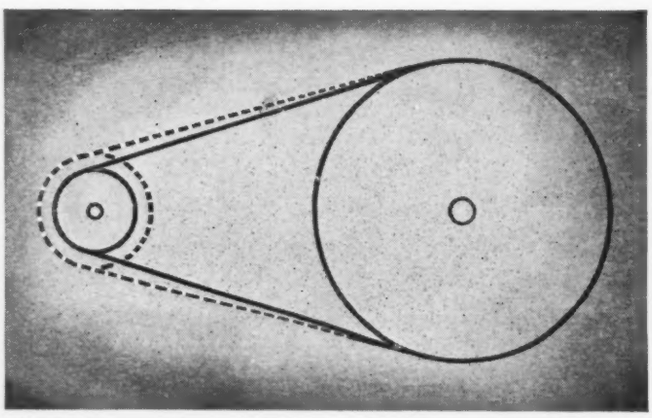


1. In most applications, an 1800 rpm motor with Texrope Drive will ably do the job of a lower-speed, direct-connected motor . . . *and* give you *exactly* the speed you want — *at lower cost!*



2. When you buy an 1800 rpm instead of 450 rpm 15 hp squirrel-cage motor, for example, 600 lb of critical materials are saved. And *you* save well over $200—with the drive figured in! This saving is typical.

➔*You Can Save with Single-Speed Instead of*



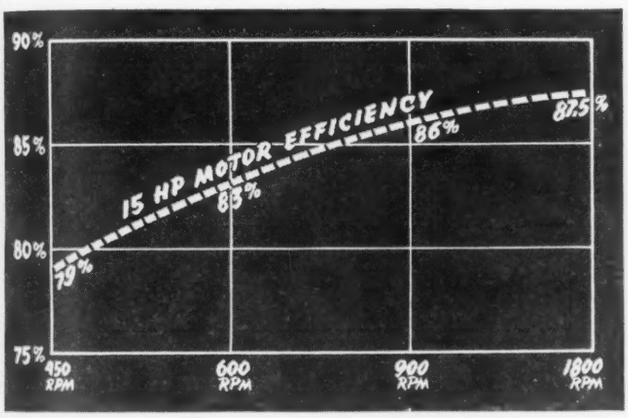
1. Infrequently needed speed changes can be had by changing from one size motor sheave to another. By juggling *complete* drives, speeds can be changed over the full range — from 1:1 to 7:1.

2. With the Allis-Chalmers Vari-Pitch Sheave, you can increase or decrease speed by adjusting sheave diameter, as above. Within limits, an unbroken series of speeds can be obtained.

Take a Fresh Buying!

WAR FORCES HIGHER EFFICIENCIES...

Low-Speed Motors...



3. Note that efficiency rises from 79% for a 450 rpm motor to 87.5% for a 1800 rpm motor. Comparing power consumption, the 1800 rpm motor saves you over 30 kw/24 hr. day.

Multi-Speed Motors...

3. Allis-Chalmers Vari-Pitch Speed Changer gives you infinite changes at the turn of a wheel — within 3.75 to 1. It's the most compact, flexible variable-speed transmission available.

It was good business in peacetime to use — as widely as possible — high-speed motors with Allis-Chalmers Texrope Drives...and single-speed motors with Allis-Chalmers Vari-Pitch Sheaves and Speed-Changers. And it's clearer every day that those material and money-saving practices are *vital* practices in time of war!

TODAY the whole picture of buying and applying motors has changed. Note at the left how much you can save for your country *and yourself* with high and single-speed motors made flexible by Texrope Drives.

As America's only builder of both electric motors and V-belt drives,* Allis-Chalmers has long advocated the proper combining of motor and V-belt drive.

And today you benefit from Allis-Chalmers' vast, pioneering experience in this field when you ask for and get the *right* combination of Lo-Maintenance Motor and Texrope Drive! Call your nearby district office. Or write ALLIS-CHALMERS MFG. CO. MILWAUKEE, WISCONSIN.

A 1560

*Allis-Chalmers *originated* the Multiple V-Belt Drive and Vari-Pitch Sheaves.

ALLIS-CHALMERS A-C MILWAUKEE

WE WORK FOR VICTORY WE PLAN FOR PEACE

Mills and Mill Workers

Comments by Henry G. Lord

In the October issue I told the story of the sale of the old Readville Mill to a Japanese purchaser. A few days after that issue was distributed I received this letter:

"Dear Mr. Lord:

"I was greatly interested in reading your page in the October issue of Textile World, where it tells about Japanese "scrap" and the sale of the Readville Mill. It looks as if you and I both got into that same "scrap."

"You say you could prove that story was true if the Knight brothers were alive. Well, Sir, I am alive and you can prove it by me.

"Mother and I were working in the Readville Mill at that time. The superintendent was Mr. Mills. Mother's boss in the card room was John Finey. My boss was James Hartley in the weave shop. Mother was the last one to run the roping off the speeders and I was the last one to weave the last piece of cloth in that mill.

"You might be interested to know that that very Jap came to ask Mr. Mills, the super, if mother and I would go to Japan and learn the Japs how to do our work. Mother thought we had traveled far enough—from England to Valley Field, Canada, and then to the States.

"You say in your page that you don't feel sorry for that Jap buying that old mill at a big price. Well, that goes for myself and mother and we are glad we didn't go to Japan. I am working now in the city of Cohoes.

"I enjoy your stories very much and thought you might like to hear about my being with the Readville Mill when it was sold.

Mrs. Elizabeth Tooley"

It pleased me very much to hear from Mrs. Tooley. I am glad she did not go to Japan.

The six looms that she was operating at Readville, on "Fruit of the Loom" sheeting, were Colvin looms made many, many years ago at River Point, R. I.; 2 shuttles to loom, no stop motion, no drop wires; yarn under two wooden rods, under and over; 4 cotton harnesses, skip shaft, shuttle stand on top of looms.

I used occasionally to see Colvins in some of the old mills, but they must have all gone now to the scrap heap, followed also by the Lowell, Mason, Whitin and Kilburn looms, which gradually went out of the picture as automatics displaced them.

But the old *mill workers* didn't go "out of the picture." They adjusted themselves to modern machinery and conditions and many of them, like me, can look back and smile when they think of the old mills and equipment and contrast them with modern conditions.

Elsewhere in this issue Mrs. Tooley tells the story of her mill life, which is the human side of the transition from the old days in Lancashire to modern mill life in the U. S. A.

The change has been so gradual that, except for dramatic developments like the revolving top flat card, the ring frame, the automatic loom and modern air conditioning, the average person does not realize what tremendous strides have been made in the past fifty years.

And the genius of our machinery builders and mill men has not reached a stopping point; great improvements will surely come in the future. I cannot visualize them, but whatever they may be, I know the mill workers will adapt themselves to the new conditions just as Mrs. Tooley has.

HENRY G. LORD, *Vice-President of McGraw-Hill Publishing Co. and Founder of Textile World*

It's too small for ALL the jobs to be done

HELP S-T-R-E-T-C-H IT

Consider these things when figuring motor sizes

Don't overlook this hidden factor

Both N.E.M.A. and A.S.A. Standards specify that general-purpose electric motors shall be suitable for carrying CONTINUOUSLY a load of 1.15 times the rated load. Thus, a 5 hp. motor can carry 5¾ hp.

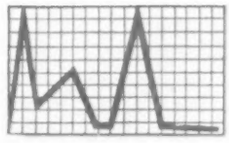
Make use of this. Save a frame size and S-T-R-E-T-C-H vital materials — copper, steel, aluminum.

WITH *copper* one of our most critical materials it's *our* job and *your* job to see that it gets to the spot where it does the most damage to our enemies. You want more motors. We shall have less copper for building them.

Here are some of the things that can be done about it:

Make more careful studies of machine loads. Don't over-motorize just to "play safe." We are in a spot where we must do some conservative gambling.

CHECK DUTY CYCLE . . . . Maybe an intermittent-duty motor will do, using a frame size smaller than the continuous-duty motor.



CHECK TORQUE REQUIREMENTS. Maybe a motor with special torque characteristics will take a frame size smaller and save vital materials.

CHECK SPEEDS. If it's a constant-speed motor, save a frame size by going to next higher speed, 1200 rpm. instead of 900 rpm.; 1800 rpm. in place of 1200 rpm.

If it's an adjustable-speed d-c. drive, can you get by with a higher minimum speed? A 1 to 3 range instead of 1 to 4? For example, using 500-1500 rpm. in place of 400-1600 rpm. saves a frame size.

Could you get along with a single-speed a-c. motor or a single-winding multi-speed motor instead of a two-winding multi-speed motor?

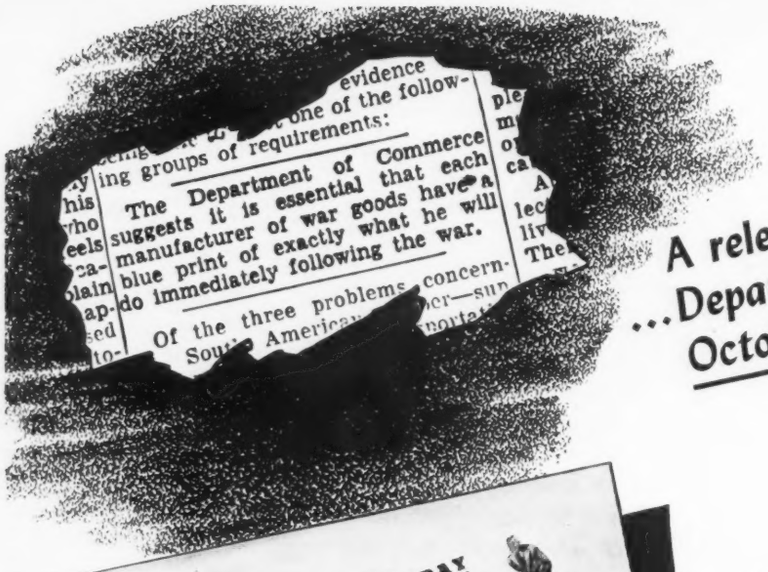
CHECK VOLTAGES. Specify single-voltage a-c. motors. They use but 3 leads instead of 9.

This job involves Application Engineering, which is our business. Reliance men skilled in this work are ready to help and are available in the industrial centers listed below.

RELIANCE ELECTRIC & ENGINEERING COMPANY
1088 IVANHOE ROAD • CLEVELAND, OHIO

BIRMINGHAM • BOSTON • BUFFALO • CHICAGO • CINCINNATI • DETROIT
GREENVILLE, S. C. • HOUSTON, TEXAS • LOS ANGELES • MINNEAPOLIS
NEW YORK • PHILADELPHIA • PITTSBURGH • PORTLAND, ORE. • ST. LOUIS
SAN FRANCISCO • SYRACUSE, N. Y. • AND OTHER PRINCIPAL CITIES

RELIANCE A-C D-C MOTORS


evidence
one of the follow-
ing groups of requirements:
The Department of Commerce
suggests it is essential that each
manufacturer of war goods have a
blue print of exactly what he will
do immediately following the war.
Of the three problems concern-

A release from the ...Department of Commerce October, 1942

A Saco-Lowell recommendation ...made in February, 1942

The recommendation made to manufacturers by the Department of Commerce to "blueprint" their postwar requirements is sound and timely. Blueprints today—as recommended by us in February this year—will save valuable time later when the demand for equipment must be met with as little delay as possible.

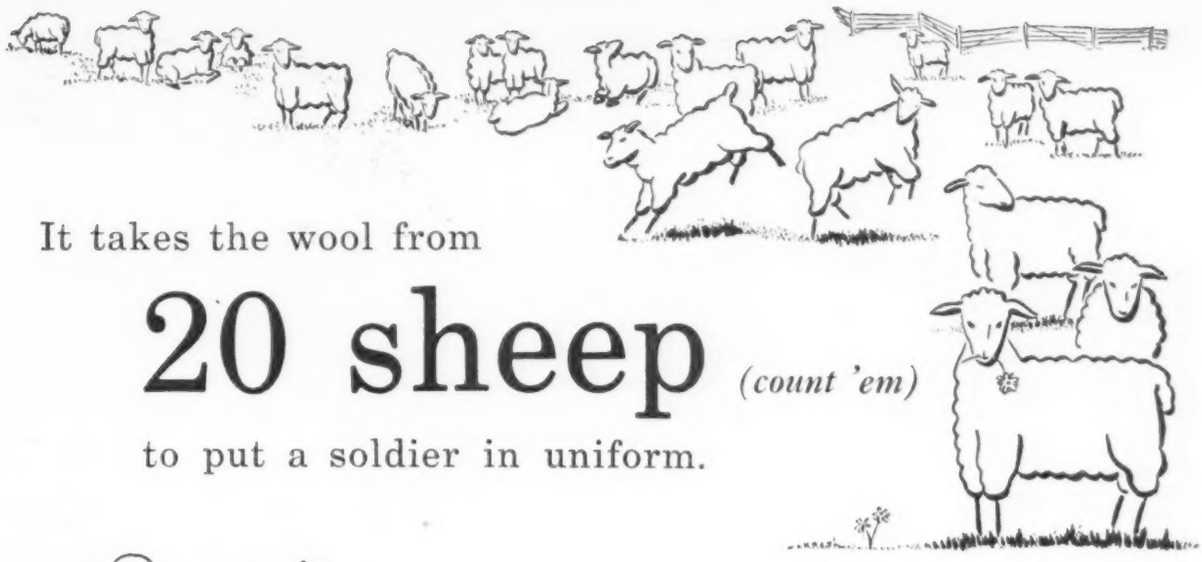
Mills interested in beginning the preparation of a program to Saco-Lowell-ize* should act promptly. And since this work will not interfere with your present production the planning of such a program can be carried out at this time by your own mill staff in cooperation with Saco-Lowell engineers.

* **1.** To utilize floor space so as to achieve the ideal in continuity of production. **2.** To coordinate all successive steps in processing. **3.** To reduce waste, spoilage and useless transportation of stock. **4.** To attain the greatest economy in maintenance and operating costs.

SACO-LOWELL SHOPS

60 BATTERYMARCH STREET., BOSTON, MASS.

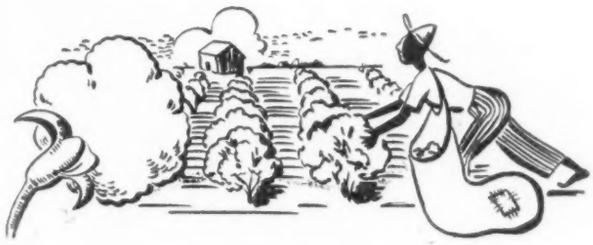
Charlotte, N. C. Greenville, S. C. Atlanta, Ga.



It takes the wool from

20 sheep *(count 'em)*

to put a soldier in uniform.



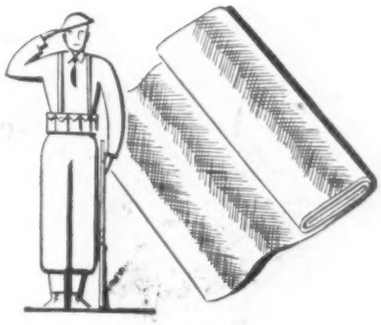
To say nothing of a

Half-Acre of Cotton

It all adds up to millions and

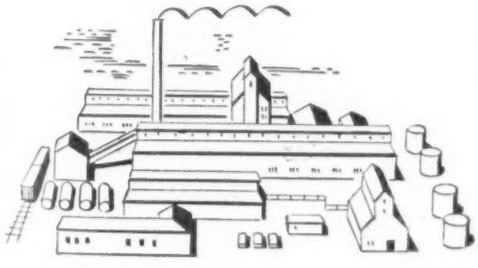
Millions of Yards of Cloth

which the textile industry is producing in record time to supply the needs of our soldiers, sailors, and marines.



Yarmor* 302-W Pine Oil

is doing its job to speed this tremendous yardage on schedule. Yarmor 302-W saves as much as 30% in the fulling operation alone. By penetrating the fibers, lubricating the stock, and holding the dirt and grease in suspension for easy rinsing, it's doing a job also in kier boiling, as a dye assistant, and in many other operations.



And for processing of more needed wool and cotton, the

Hercules Naval Stores Plants

are now producing synthetic pine oils to help, also.

NAVAL STORES DEPARTMENT

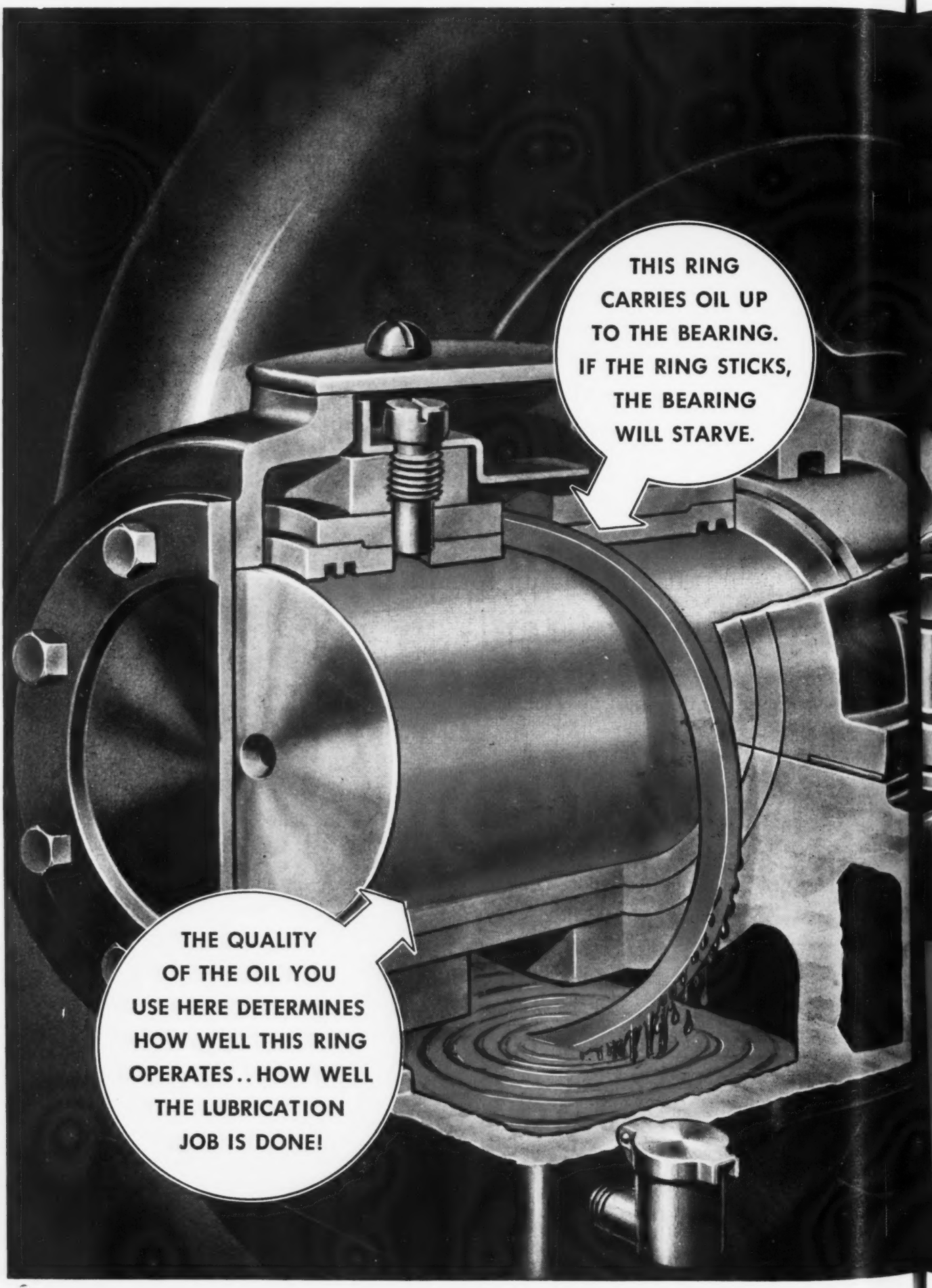
HERCULES POWDER COMPANY

Incorporated

994 MARKET STREET • WILMINGTON • DELAWARE

Branch Offices: Chicago • New York • St. Louis • Salt Lake City • San Francisco

*Reg. U. S. Pat. Off., by Hercules Powder Company


THIS RING CARRIES OIL UP TO THE BEARING. IF THE RING STICKS, THE BEARING WILL STARVE.
THE QUALITY OF THE OIL YOU USE HERE DETERMINES HOW WELL THIS RING OPERATES.. HOW WELL THE LUBRICATION JOB IS DONE!

If This Ring Sticks You're Stuck!

WARTIME DEMANDS MAKE THE HIGHEST QUALITY LUBRICANTS FOR ELECTRIC MOTORS A "MUST"!

Problem: Look at the ring in the picture at the left. It must pick up oil from the well beneath the bearing and deliver it to the top of the journal. If the oil is too thin, not enough oil will reach the bearing. If it is too thick or if deposits are formed, the ring may stick and "starve" the bearing.

Answer: *Gargoyle Etna Oil Heavy Medium* is a special, electric-motor oil of correct body. Its high stability effectively resists oil thickening and the formation of deposits that may cause the ring to stick. The result is, the bearing is assured an ample supply of oil.

For grease-lubricated, electric-motor bearings, we recommend *Gargoyle Greases BRB.* These anti-friction bearing greases offer great resistance to oxidation. This and their tenacious films protect the polished surfaces against corrosion and wear. They will not form hard, soapy deposits that restrict the free movement of balls or rollers. They help minimize leakage.

TO HELP MAINTAIN WARTIME PRODUCTION, CALL IN

SOCONY-VACUUM for "Correct Lubrication"

GARGOYLE Lubricants

SOCONY-VACUUM OIL CO., INC. — Standard Oil of N. Y. Div. — White Star Div. Lubrite Div. — Chicago Div. — White Eagle Div. — Wadhams Div. — Southeastern Div. (Baltimore) — Magnolia Petroleum Company — General Petroleum Corporation of Calif.

A NEW H & D LITTLE PACKAGING LIBRARY BOOKLET IS READY

Yours for the Asking

SHIPPING ... IS YOUR PROBLEM, TOO!

EVERY MAN IN YOUR SHIPPING DEPARTMENT SHOULD READ THIS BOOK

Tells how to cut costs with practical, everyday working suggestions. Covers every phase of packing and shipping operations, from receipt of empty shipping boxes through loading packed boxes in freight car or truck.

Points out packaging short cuts. Shows how to cut time in storing, sealing, packing, stacking, loading corrugated shipping boxes. Suggestions are particularly valuable in packing war materials where time saving is vitally important.

Handy reference book. No matter what operation he performs, every man in your shipping department should read this book. He'll do a better job because of it.

Send for several copies. Be sure to ask for enough additional copies to supply all people interested. There is no obligation.

Write today. If you have a specific packaging problem, turn it over to the H & D Packaging Laboratory. There is no charge for Package Laboratory service.

HINDE & DAUCH 4230 *DECATUR STREET, SANDUSKY, OHIO*

FACTORIES in Baltimore • Boston • Buffalo • Chicago • Cleveland
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BETTER SEE H&D AUTHORITY ON PACKAGING

In Recognition

To Our Customers, Friends and Suppliers

For your part in winning the

MARITIME MERIT AWARD

To the Employees of
Whitin Machine Works

Given by the United States Maritime Commission
including the Maritime "M" Pennant, Victory Fleet Flag,
and the Maritime Labor Merit Badges.

E. Kent Swift

PRESIDENT

WHITIN MACHINE WORKS

NOVEMBER 7TH, 1942

FOSTER MODEL 102 TUBES

Why they are best for Warping or Twisting Yarns

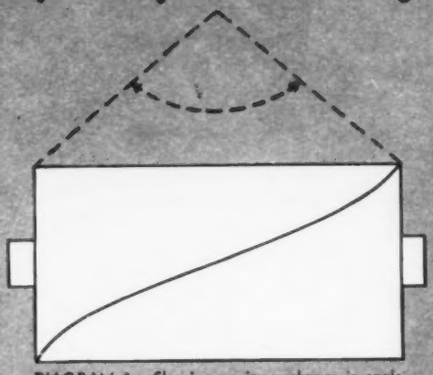


DIAGRAM A—Showing maximum change in angle of pull per revolution of tube.

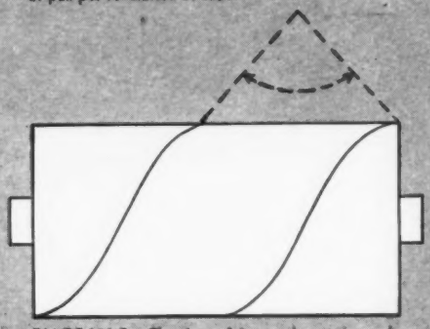


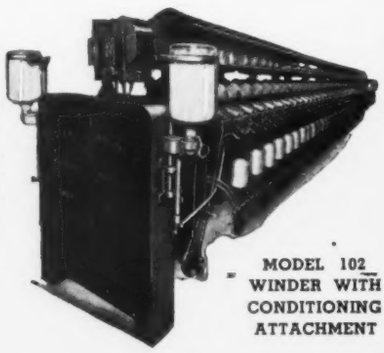
DIAGRAM B—Showing minimum change in angle of pull per revolution of tube.

WHEN yarn is delivering from rotating tubes in a creel, there is a sudden lash or jerk when it reaches the end of the traverse. The faster the traverse or the fewer the spirals per traverse, the more lash there is, because of the quicker change in angle of pull (see diagram A). On the other hand, the slower the traverse, or the more the number of spirals per traverse, the less lash there is because of a slower change in angle of pull (see diagram B).

This lash or jerk puts a certain amount of strain on the yarn. This strain is not serious in the case of coarse strong yarns, but when fine yarns are involved, if the lash is too much, excessive breakage may result. Uneven tension is another fault caused by excessive lashing and may be serious in some cases.

From the foregoing it is evident that the same angle of wind is not suitable for all counts or types of yarn and that the angle of wind used for the coarsest yarns (similar to diagram A) is NOT the best for fine yarns. That is one reason why the Foster Model 102 Winder provides for 9 different angles of wind from 9° to 18° simply by changing 4 small gears in the head end.

Many other advantages of this machine are explained in Circular A-91. It is yours on request.



MODEL 102 WINDER WITH CONDITIONING ATTACHMENT

FOSTER MACHINE COMPANY, WESTFIELD, MASS.

SOUTHERN OFFICE, JOHNSTON BUILDING, CHARLOTTE, N. C.

ROUTED THE RUSTY BEARING BUGABOO

SUN LUBRICANT

Saved Bearings . . . Saved Stockings . . . Saved Time

A bad rust condition in rocker bearings periodically troubled a large full-fashioned hosiery manufacturer. When removed by cleaning, rust reappeared within a week. Various brands of oil were tried—but none stopped the rusting. Finally, a Sun Oil Engineer—one of those Doctors of Industry—was called in. After careful study and experimentation, a rust preventing Sun Lubricant was applied.

Now, for more than six months this special lubricant has successfully routed the rusty bearing bugaboo . . . prevented deterioration of bearing metals . . . eliminated rusty oil spots on stockings . . . and saved time formerly lost in cleaning and reassembling bearings.

Whatever problem you may have involving petroleum products—for lubricating or processing—Sun's Doctors of Industry always stand ready . . . willing . . . and able to help you in your mill. Their services are yours to use for improving production . . . the products they have to offer have been developed to maintain that improved production. Call your local Sun office or write—

SUN OIL COMPANY • Philadelphia

SUNOCO

UN PETROLEUM PRODUCTS

HELPING INDUSTRY HELP AMERIC

Once upon a time . . .

THIS WAY YOU

BUT *today* YOU MUST BUY *production*

—when you're working three shifts and wish there were 288 hours in the week.

Sold

under these trade names

Bowen Round Point Travelers
Bowen Square Point Travelers
Bowen Improved Vertical Bronze
Bowen Patented Bevel Edge
Bowen Flat Oval and Round Wire Travelers
Bowen Patented Ne-Bow Vertical
Bowen Patented Vertical Offset

If you want "the same as you've always used" in Ring Travelers—you can get it from "U. S." If you want helpful advice on improved Traveler design or service—"U. S." can give you that, too.

U S

No. 4 OF A SERIES
BASED ON INTERVIEWS WITH TEXTILE MEN *who want more production*

OUBOUGHT RING TRAVELERS

Once upon a time it may have been all right for a Ring Traveler salesman to come into the mill and offer you a handfull of all sorts, sizes, and conditions of Ring Travelers. He'd tell you to take your pick, adding that his company made all kinds, to fit every condition.

But "them days are gone forever." Today you know, and we know, that the Ring Traveler is a highly specialized product—and with most mills running three shifts a day on war production, there's no place for anything that is not specialized. You know and we know that it does not all entirely depend on the Ring Traveler as to whether or not the Traveler you are using gives you good performance. It may depend on the rings themselves, the speed of operation of the spindles, and the count of the yarn and weight of the traveler and a lot of other factors.

It is because we know all these things that we make Travelers that so well meet specific conditions. U. S. Travelers have gained the prestige they have, and continue to hold that prestige in the textile field, on the basis of *performance*. Whether you use steel or bronze Travelers, in "U. S." you will get Travelers that *are right* in proper hardness or softness, of the proper weight, and the proper metal composition for your specific purpose. In U. S. you get Travelers that will not wear your rings, and will not so readily heat up and crack, and fly off and interrupt your production. Under U. S. process of controlled production, you will always get exactly the same uniform type of traveler for the same job, month after month, year after year.

If you want real service from men who know what it is all about—send for a U. S. Ring Traveler man. Don't wait until you have Traveler trouble. Forestall trouble by having the U. S. man come to your plant and prevent it—without any expense to you, without interrupting your work, or taking other valuble men off the job.

PERFECT BALANCE

Weighs same on both sides. Straight part of shank is in center of gravity. Distributes lubricant and wears evenly. Will not pivot twisting self and rayon.

THE NE-BOW

Prevents yarn ends flying out, provides ample headroom for threading—prevents binding on ring. Note "bend inward" at top of horn.

HEAT CONTROL

for better metal—dominates "U. S." production! Carburizing and tempering ovens are electrically controlled through pyrometers—for better performance.

THE BEVEL EDGE

...reat pioneering "U.S." ...ntribution to smooth ...nning, twisting. Eliminating angular ...ges, gives uniformity of ...nsion, more even yarn, ...ss "fly."

"Once upon a time" is dead . . . the time to take ALL steps to increase production is NOW!

★ ★ ★ ★ ★ ★

U. S. RING TRAVELER COMPANY

PROVIDENCE, AMOS M. BOWEN, Pres. and Treas. **RHODE ISLAND**

Representatives:

NEW ENGLAND	SOUTHERN		MID ATLANTIC
Carl W. Smith Herbert J. Smith both % U. S. Ring Traveler Co. P. O. Box 1187, Providence, R. I.	William P. Vaughan Oliver B. Land Terrence L. Maynard William H. Rose	P. O. Box 792 Greenville, S. C. P. O. Box 158 Athens, Georgia P. O. Box 456 Belmont, N. C. P. O. Box 792 Greenville, S. C.	M. Lee Bolton, P. O. Box 7234, Philadelphia, Pa.

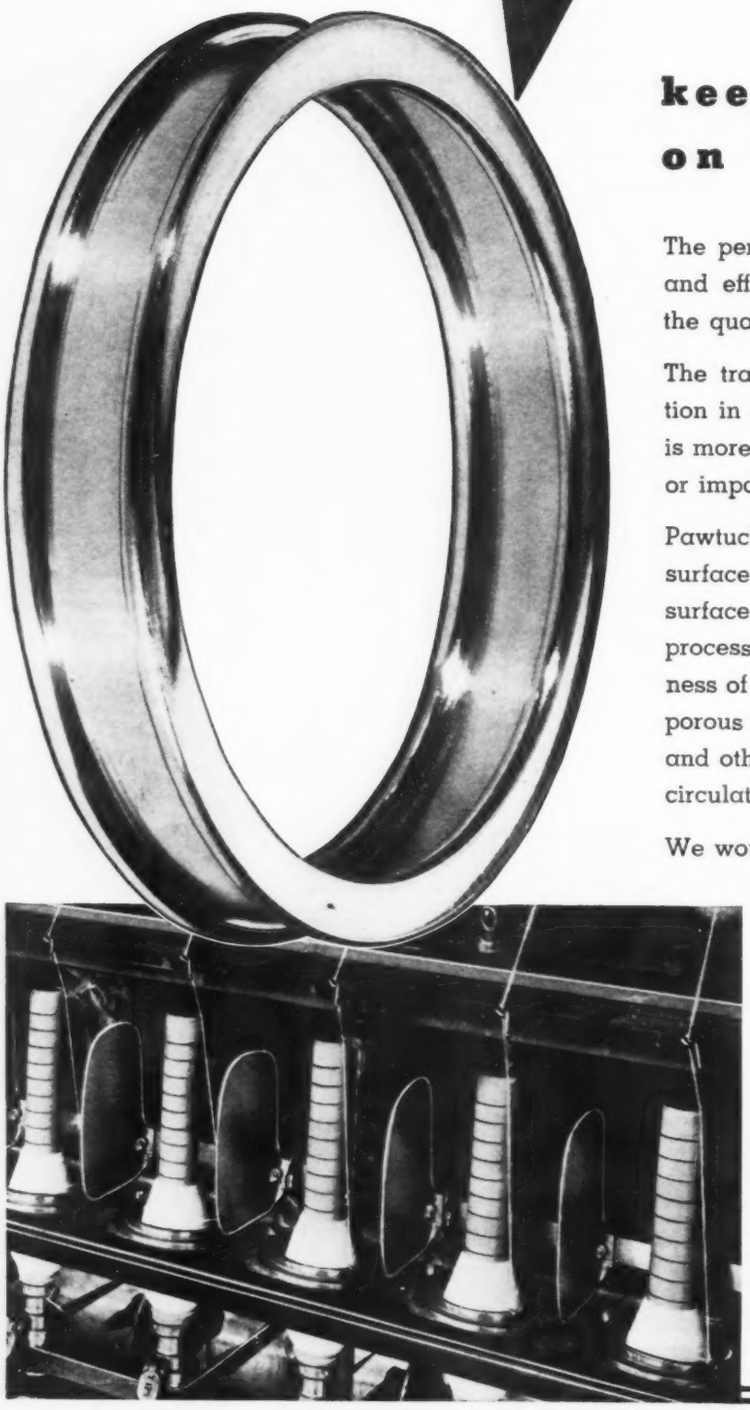
RING TRAVELERS

A Traveler for Every Fibre

THE TRAVELERS THAT KEEP GOING!

U.S. RING TRAVELER CO.

PAWTUCKET RINGS Vitritex FINISH



keep your "TRAVELERS" on the job longer!

The performance of a traveler — its long life, speed and efficiency — is almost entirely dependent upon the quality of the ring on which it is used.

The traveler and ring are an inseparable combination in good production . . . and of the two the ring is more vital, for independently it can either improve or impair the function of the traveler.

Pawtucket Rings give your travelers an operating surface that keeps them at maximum efficiency. This surface — called Vitritex — is made by an exclusive process and has the hardness of granite and smoothness of glass. Its texture is so fine and so nearly nonporous as to be almost impervious to wear, humidity and other destructive elements which are in constant circulation in the spinning room.

We would like to have you make a test in your own spinning room. Write for samples which we will gladly furnish at no cost to you.

GIVE YOUR TRAVELERS
"A TURN FOR THE BETTER"

Pawtucket
SPINNING RING COMPANY
(Subsidiary of Saco-Lowell Shops)

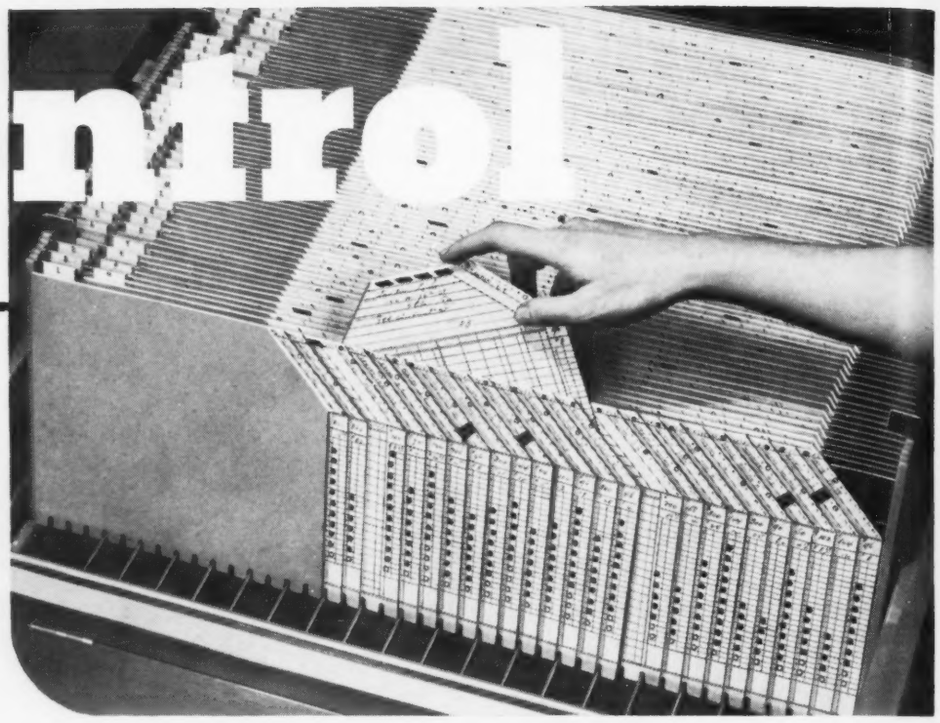
CENTRAL FALLS, RHODE ISLAND

Greetings
OF THE SEASON

One of the real joys of this Yuletide is the opportunity to put aside the heavy routine of tense everyday business, and in real sincerity, wish our many friends and customers who have borne with us patiently, cooperatively and with generous understanding, a Merry Christmas and a New Year filled with the promise of better things to come.

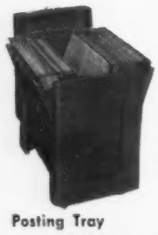
CIBA COMPANY, INC.

Control



Double Counter Height Desk
capacity up to 40,000 records

Single Pedestal Desk
capacity up to 12,500 records



Posting Tray
capacity up to 5,000 records

Executive Desk Model
capacity up to 700 records

SIMPLIFIED WITH *VISI*record

*VISI*record Control is not a new system of record-keeping, but an all around better method! It utilizes the best features of modern visible equipment (without the use of wires, clamps or pockets)—and combines them in an exclusive Visible arrangement that makes an open book of hitherto dark, complex operations. Facts and figures that are required for constant reference, comparison or computation become live, purposeful records . . . a veritable panorama of production or progress—compact in from ⅓ to ½ customary space—responsive to the touch—and alive with a triple margin visibility—and simplicity—unknown in record-keeping equipment until the advent of *VISI*record, "The World's Fastest Visible Record Keeping System."

There are scores of additional *VISI*record advantages such as unrestricted card sizes, positive control of misfiled cards, signalling and charting . . . and portability! Entire sections may be moved in units for those hasty progress-report conferences when facts and figures speak louder than words!

Costs lots less to install, operate and maintain than bulky, outmoded equipment.

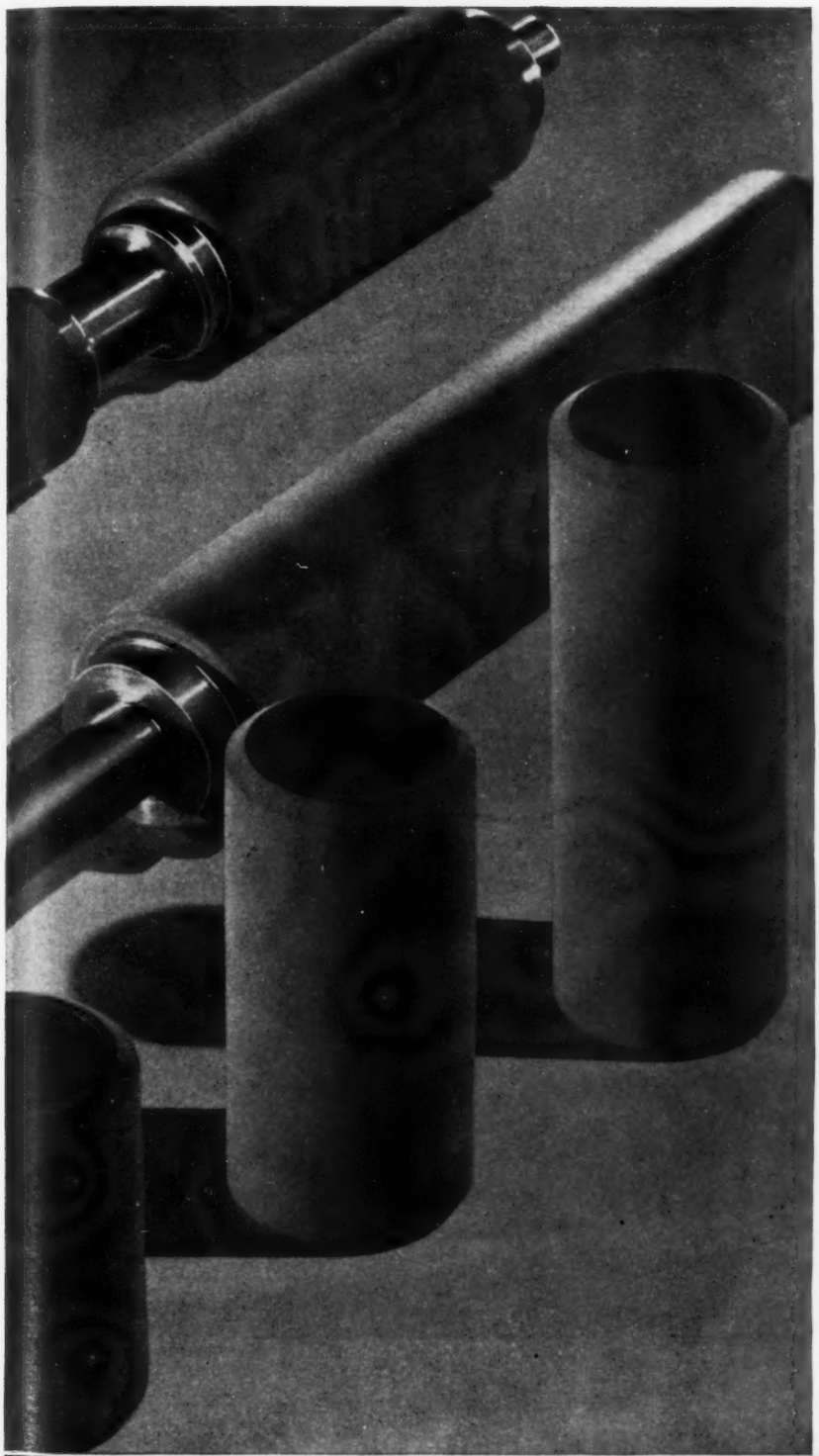
Better investigate while these facts are fresh in your mind. Write for Booklet 36, "Keep These Vital Records Up to the Minute." There's no obligation.

VISIBLE INDEX CORPORATION
535 FIFTH AVENUE, NEW YORK, N. Y.
OFFICES IN PRINCIPAL CITIES

VISIrecord

"THE WORLD'S FASTEST VISIBLE RECORD KEEPING SYSTEM"

WHAT OTHER SYNTHETIC COVERING GIVES YOU ALL THESE ADVANTAGES?



✓ **Good Coefficient of Friction**—Less eybrowing than with other synthetic cots.

✓ **Ready-Glued**—Inner surface coated with water-soluble glue for quicker assembly.

✓ **Resilience**—Nonthermoplastic, highly resistant to flattening; aid quick startup.

✓ **Durability**—Long life, resistance to grooving even under severe operating conditions.

✓ **Oil-Resistance**—Unaffected by oil, water, dyes, or solvents used in textile mills.

✓ **Uniformity**—Homogeneous composition assures uniform wear, equal life of every cot.

✓ **Seamless**—No surface irregularities; no troublesome seams to open and shorten life.

Here are the roll coverings for extra-heavy duty — Armstrong's Accotex Cots—proved excellent for use where extreme toughness and solvent-resistance are essential. These rubber-like synthetic cots are recommended especially for use (1) on frames spinning coarse numbers, particularly frames equipped with revolving clearers; (2) on back line rolls of long draft roving and drawing frames; (3) on wet twisting equipment.

Consider all seven advantages of Accotex Cots before you choose any cot for heavy-duty service. And be sure to consult Armstrong about any roll covering problem you have. You can count on unbiased recommendations because we make both cork and synthetic cots. Armstrong Cork Company, Textile Products Section, 927 Arch Street, Lancaster, Pennsylvania.

ARMSTRONG'S ACCOTEX COTS

CORK COTS ACCOTEX APRONS

CARD CLOTHING is a MUST

Soldiers, sailors and the thousands of workers on war production must have clothing and other textile equipment. *Every bit of yarn used in uniforms, overalls, underwear, sox, blankets, sheets, and the hundred other items must first be processed by Card Clothing.*

★ The wool of 10 sheep must be carded to outfit one soldier. It will take a lot of carding to equip 6,000,000 soldiers. It is estimated that cotton cloth production for 1941 exceeded 1940 by 2,000,000,000 square yards.

★ As textile production soars . . . so must Card Clothing production . . . and so must the materials to make it. We sincerely believe our patented TUFFERIZING process makes the maximum use of materials entrusted to us.

Step up production with

TUFFERIZED CARD CLOTHING

PRODUCTS

. . . Card Clothing for Woolen, Worsted, Cotton, Asbestos and Silk Cards • Napper Clothing, Brush Clothing, Strickles, Emery Fillets. Top Flats Recovered and extra sets loaned at all plants

HOWARD BROS. MFG. CO.

WORCESTER MASSACHUSETTS

Lickerins and Garnet Cylinders from 4 to 30 inches and Metallic Card Breasts Rewired at Southern Plant • Midgley Patented, and Howard's Special Hand Stripping Cards • Inserted Eye and Regular Wire Heddles

Southern Plants: Atlanta, Ga., Gastonia, N. C. **Branch Offices:** Philadelphia, Dallas. **Canadian Agents:** Colwool Accessories, Ltd., Toronto 2

Costain photo; courtesy Esmond Blankets

SPEED UP AND SAVE WITH CITIES SERVICE LUBRICANTS

Gear your production to skyrocketing demand. Make your customers and Uncle Sam happy by getting even more than the miracles your mills now are performing.

Cities Service precision-made and service-proved lubricants, when carefully selected by a competent lubrication specialist and properly applied, can do much to step-up your daily output. And economically, too! Let one of our lubrication engineers show you how on your own machines. It will be well worth your while to talk over your problems with him—and you will incur no obligation.

OIL IS AMMUNITION—USE IT WISELY!

CITIES SERVICE OILS
ONCE-ALWAYS

Write to —
CITIES SERVICE OIL COMPANY
Room 1326, Sixty Wall Tower, N. Y.
or any of the following offices:
CHICAGO · CLEVELAND · ST. PAUL
KANSAS CITY · BOSTON · TORONTO
or to
ARKANSAS FUEL OIL COMPANY
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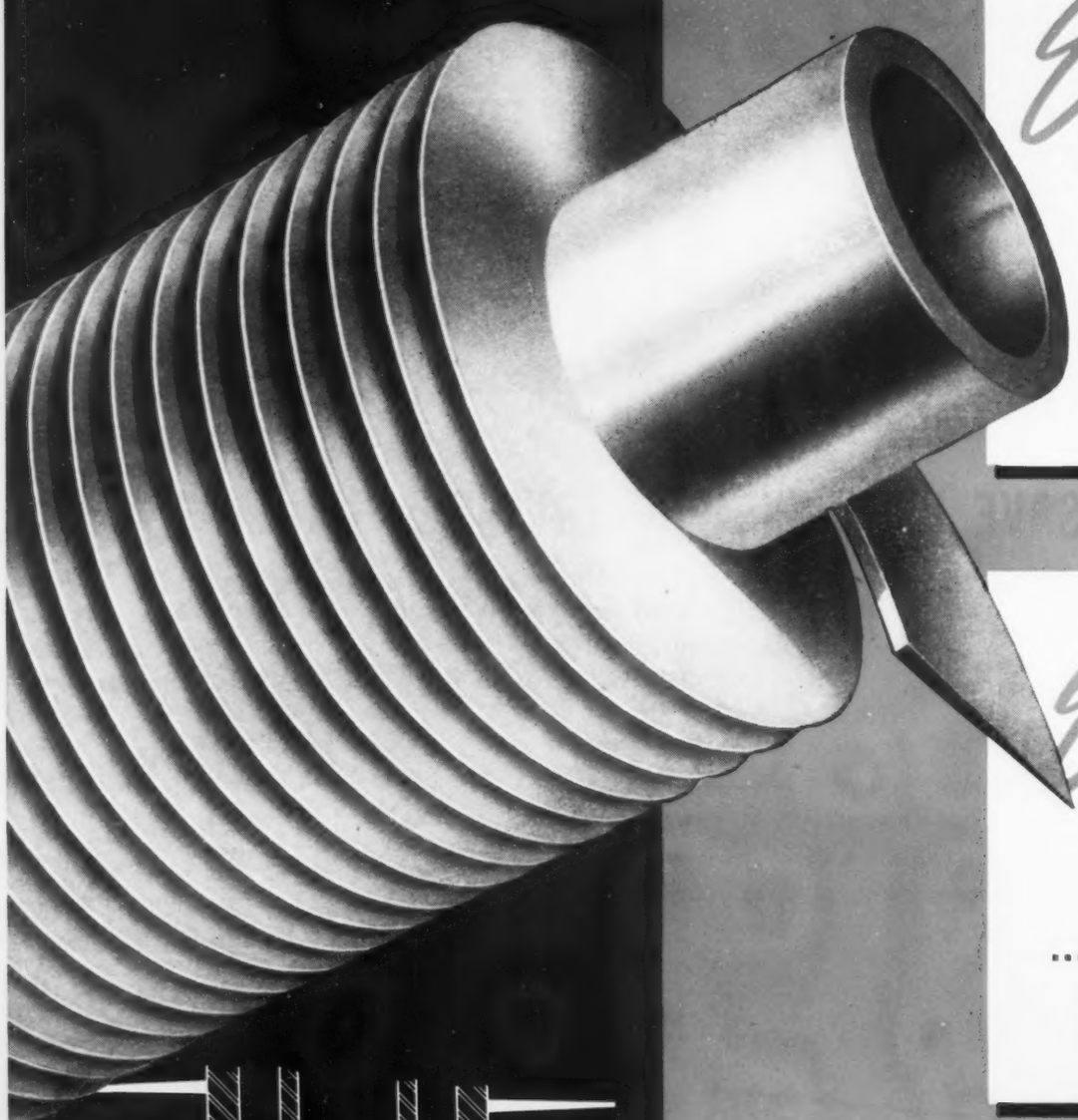
CITIES SERVICE TEXTILE LUBRICANTS

Include Glade Oils and Trojan Greases for:

Looms	Calender Rolls
Knitting Machines	Printing Machines
Beamers	Spinning Machines
Twisting Machines	Spoolers
Warpers	Winders, etc.

A LUBRICANT FOR EVERY INDUSTRIAL NEED

New A Reliable



Exclusive

IT'S BUILT AROUND STANDARD STEEL PIPE

...The life and service of which is familiar to every one.

Exclusive

SMOOTH TAPERED FINS SPEED AIR FLOW

...Absence of Crimping Cuts Air Resistance and Dust Accumulation.

FAST-FLOW HEAT TRANSFER

Cross-section illustrates the Sturtevant smooth, tapered fins, secret of the high performance of this new Sturtevant all-steel extended surface. Notice how the fin is shaped to promote equal heat intensity at every point along its section. No crimping to collect dust or impede airflow.

SINGLE-TUBE INTERNAL TUBE CONSTRUCTION FOR HEAVY DUTY

A time-tested form of construction which has given dependable performance for a quarter of a century.

Steel Heater!

STURTEVANT HEAVY-DUTY ALL-STEEL HEATER

—especially suitable for industrial high temperature applications!

It's the result of 3 years' research on steel heating coils. NOT a substitute for shortages—but a radical improvement in extended surface design for *NOW* —and *After the War!*

Featuring standard steel pipe construction to withstand severest services – smooth fins to minimize air flow resistance – tapered fins for fast-flow heat transfer.

FULLY GUARANTEED!

Now, for all heating and drying work, there is no reason to risk early and frequent replacement. Instead, this Sturtevant heavy-duty steel extended surface gives you all the advantages of encased heater sections, is as reliable as the old Sturtevant Pipe Coil Heater, many of which are still in service after more than 50 years of satisfactory operation, and carries the same guarantee which is customary on copper units.

Overcomes many troubles that occur at higher steam temperatures

Need for a heavy-duty all steel surface has always been evident in certain installations where conditions caused corrosion of copper. Here's how the new Sturtevant heavy duty heater licks this problem: Steam is carried in standard steel pipe from the time it enters the heater until it goes back into the condensate line; the unit is as durable as the supply and return lines themselves.

And there are plenty more reasons why this latest Sturtevant development makes front page news in industry;—1, it utilizes a proved principle known as Internal Tube Construction—used by Sturtevant for 25 years; 2, it can be installed either vertically or horizontally, header required only on one end; 3, made in the same standard sizes as copper units—hence requires no more space. Performance and dimension data available on request.

Sturtevant

REG. U. S. PAT. OFF.

Puts Air to Work

IRON AND STEEL ARE DESPERATELY NEEDED

Throw Your Scrap into the FIGHT!

T.W. 12

B. F. STURTEVANT CO.
Hyde Park, Boston, Mass.

I am interested in the new Sturtevant All Steel Heater for the following essential applications_____

_____

Please send further information to:

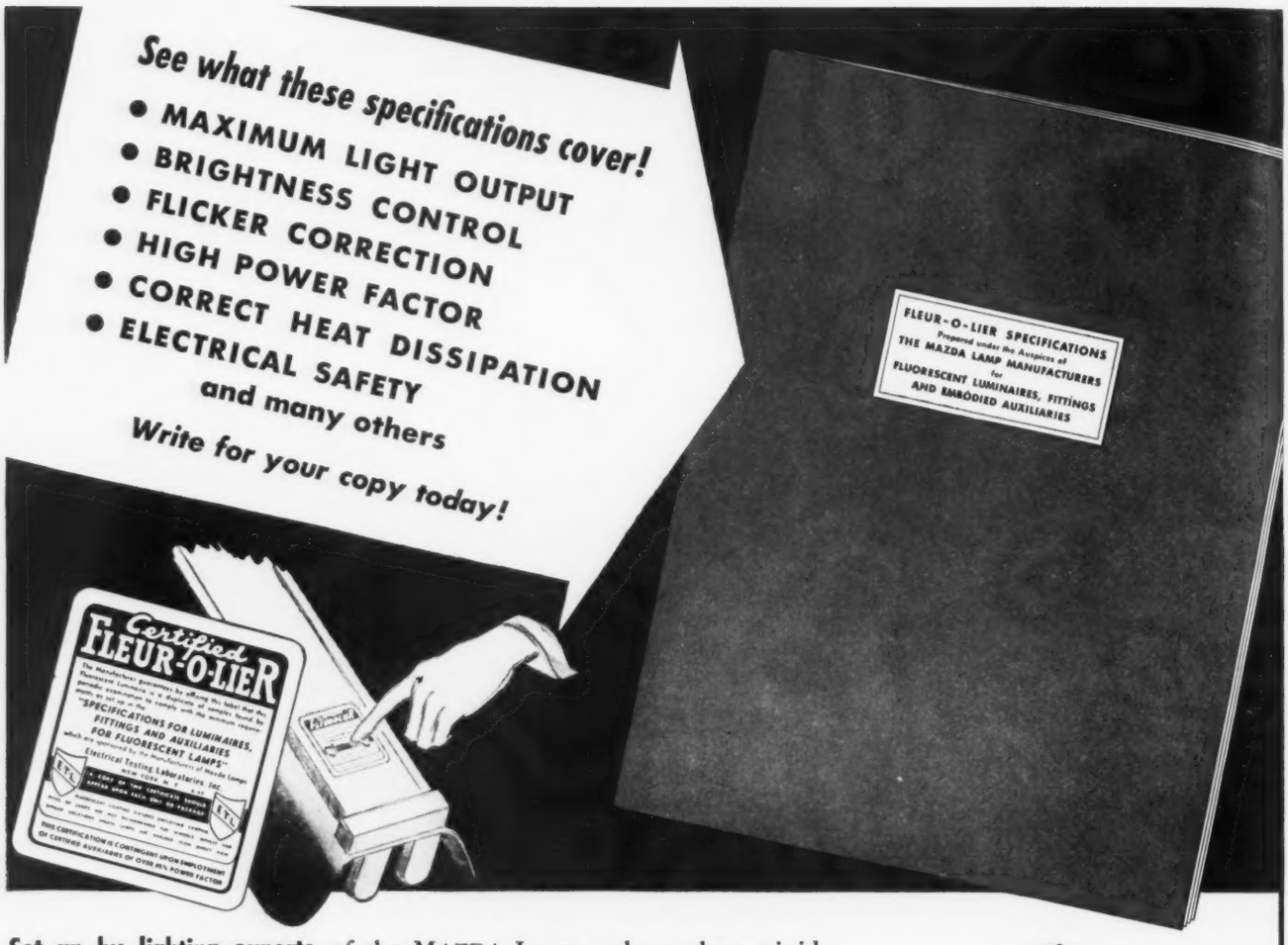
Name_____ Title_____

Company_____

Address_____

Get this extra assurance when you plan

WAR PLANT FLUORESCENT LIGHTING!



Set up by lighting experts of the MAZDA Lamp makers, these rigid specifications guide the manufacture—by over 40 leading fixture makers—of the famous Certified FLEUR-O-LIER fixtures . . . assure you of electrical, mechanical and lighting excellence.

FLEUR-O-LIERS are tested and Certified by impartial experts (Electrical Testing Laboratories, Inc., of New York) as providing the precise qualifications that mean so much to war production men: maximum light output—ease of maintenance—full use of wiring systems—as well as many other vital points that assure reliable lighting performance. *Look for the label* on the fixtures you specify for essential war use.

Get this valuable guide to use when you plan or specify fluorescent lighting for war work. Write NOW for the booklet shown above. FLEUR-O-LIER MANUFACTURERS, 2120-12 Keith Building, Cleveland, Ohio.

NON-FERROUS REFLECTORS

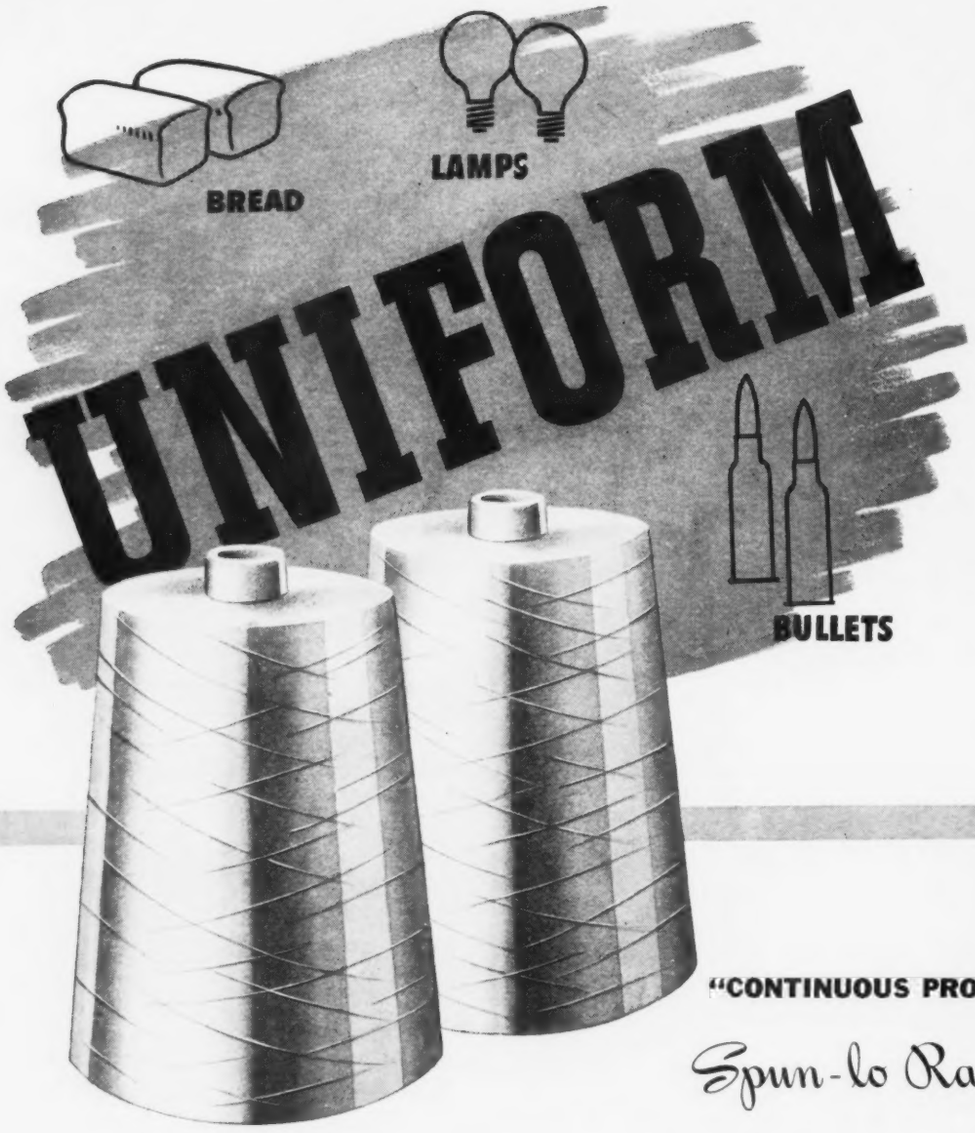
Many FLEUR-O-LIER Manufacturers have already made available Certified FLEUR-O-LIER fixtures using non-ferrous reflectors which meet the requirements of WPB Limitation Order L-78 (Amended). They are now sold only on an A-1-j priority or better. Check with your electrical distributor, contractor or local electric company for full details.

FLEUR-O-LIERS

CERTIFIED FIXTURES FOR FLUORESCENT LIGHTING

Participation in the FLEUR-O-LIER MANUFACTURERS' program is open to any manufacturer who complies with FLEUR-O-LIER requirements

BECCO
ELECTROLYTIC
HYDROGEN
PEROXIDE
Keep in touch with
BECCO
HYDROGEN PEROXIDE TECHNICAL SERVICE
for accurate, reliable, and comprehensive information on Peroxide Bleaching of all fibres...by all Methods and Procedures including all systems of Continuous Bleaching.
BECCO
BECCO SALES CORPORATION
BUFFALO, N. Y.
Branch Offices in Boston, New York City, Philadelphia, Chicago and Charlotte



"CONTINUOUS PROCESS"

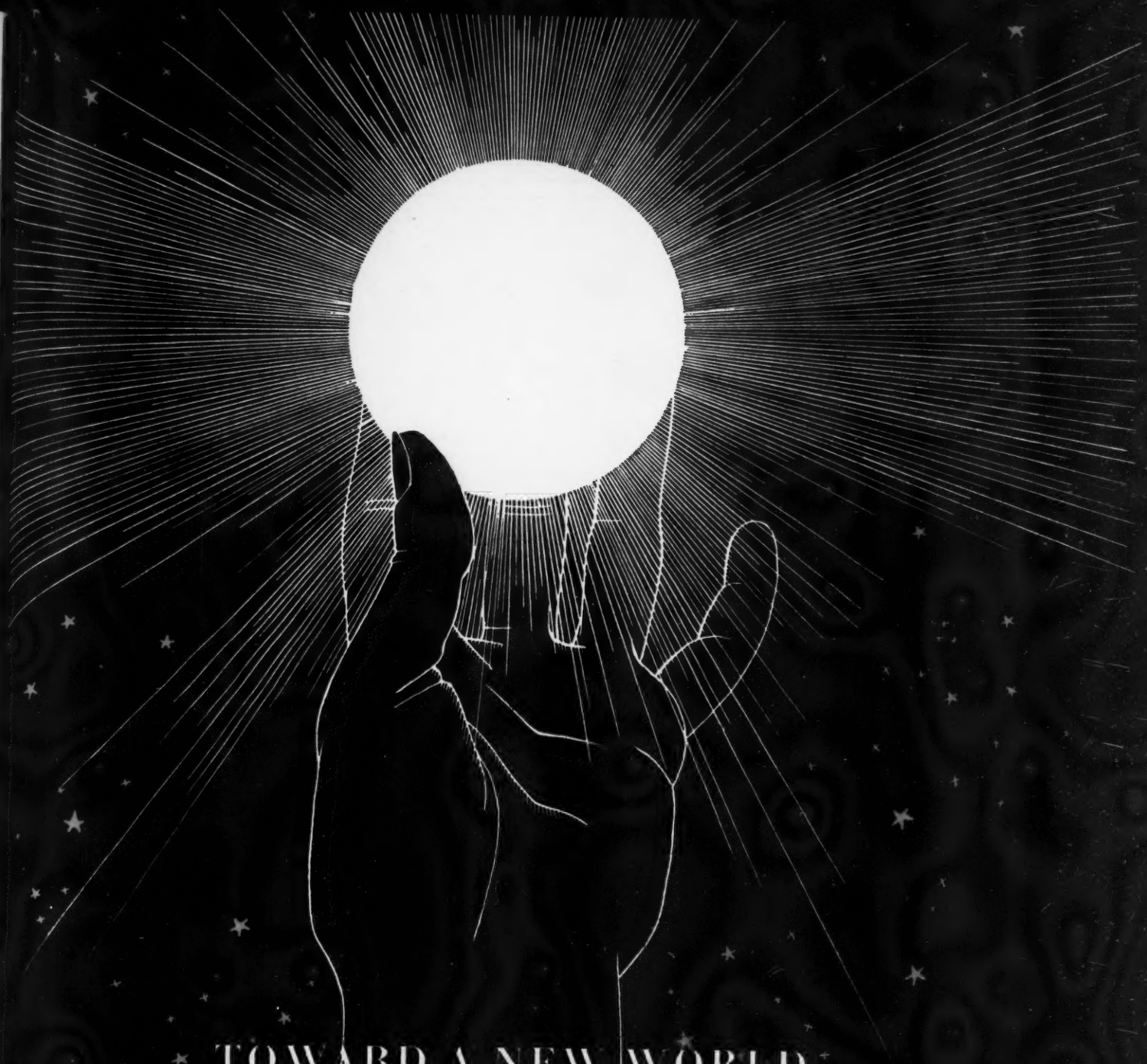
Spun-lo Rayon

STUDY the history of most of our leading industries. What's happened? Through the years, improved techniques have been found to give uniformity to the product. Today, the baker's loaf is the same golden brown product, Monday or Thursday, next week or next month. The lamp you screw into your socket is standard. War needs require absolute uniformity too. The bullet used by our boys in North Africa must be identical with that used on Guadalcanal.

And the revolutionary "Continuous Process" of rayon production has achieved the same result for Spun-Lo—producing a yarn virtually free of knots and broken filaments —a yarn, every inch of which is spun, washed, bleached, treated, dried and twisted as a single thread, in a *continuous* operation —a yarn that is absolutely UNIFORM, inch by inch, pound by pound, cone by cone.

"CONTINUOUS PROCESS" Spun-lo Rayon
Reg. U. S. Pat. Off.

INDUSTRIAL RAYON CORPORATION • Cleveland, Ohio—New York Office, 500 Fifth Avenue



TOWARD A NEW WORLD

Out of the frenzied ferment into which the whole world has been so violently tossed there will evolve a new sphere of action ☆ Out of this epic struggle America will emerge mightier than ever with its resources intact and potentialities expanded ☆ Machines of destruction will be converted into engines of creation. American industry will continue to use all hands and pour forth an abundance of products that will be needed by exhausted nations ☆ Out of our efforts to meet today's emergencies will come unique discoveries that will contribute vastly to the life of tomorrow. Every hour we are moving faster toward that *New World.*

GENERAL DYESTUFF CORPORATION • NEW YORK

L. F. Dommerich & Company

Executive and General Offices

271 MADISON AVENUE
NEW YORK, N. Y.

Telephone: AShland 4-8650

FACTORS

For Manufacturers and Merchants

Inquiries as to our services solicited

●

ESTABLISHED 1840

DAYCO WORSTED COTS
PIONEERED, ENGINEERED AND PROVED BY ACTUAL MILL SERVICE

1. Last up to 12 times longer.
2. Save time, money and power.
3. Uniform and non-varying.
4. Won't groove—have no bumps or hollows.
5. Won't chip out—need no aging.
6. Require less tension—eliminate resets after shut-downs.
7. Easily and quickly applied to the arbors.
8. Guaranteed not to come loose from the rolls.

WELL PREPARED was the Quartermaster's Corps to clothe America's fighting forces better than any Army in history.

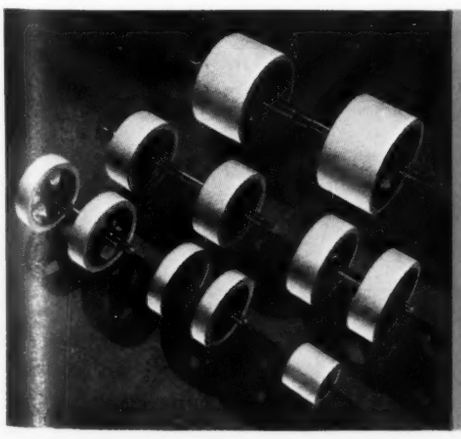
Well prepared, too, were our Textile Industries to supply millions upon millions of yards of cloth and fabrics which pass the Quartermaster's tests for everything from strength of thread to wear, wind, water, cold and sun resistance.

Well prepared, also, were Dayco Worsted Cots to set entirely new standards for delivering month-after-month, record-breaking performance on the toughest assignments without rebuffing, while producing more uniform yarn and saving time and labor.

THE DAYTON RUBBER MFG. CO.
DAYTON, OHIO
HOME PLANT, TEXTILE PRODUCTS DIVISION
WAYNESVILLE, NORTH CAROLINA
The Originators and Pioneers of Dayco Tempered Roll Coverings
MAIN SALES OFFICE
Woodside Building . . . Greenville, S. C.

EXPORT DIVISION
DAYTON RUBBER EXPORT CORPORATION
38 Pearl Street New York, N. Y. U. S. A.

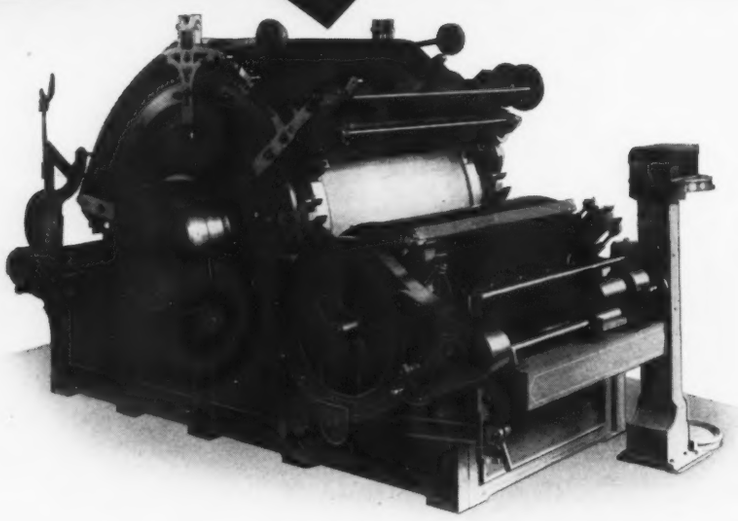
THROW YOUR SCRAP INTO THE FIGHT!



Dayton
Thorobred TEXTILE PRODUCTS
Dayco WORSTED COTS—LOOM SUPPLIES
MADE BY THE WORLD'S LARGEST MANUFACTURER OF V-BELTS

Copyright 1942, The Dayton Rubber Manufacturing Company

They Have Served in 5 Wars



An H & B
Revolving
Top Flat Card

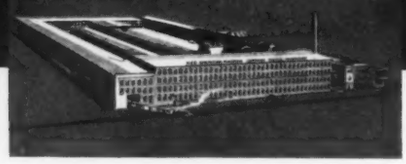
In 1895 we installed 24 new H & B Revolving Top Flat Cards in a New England mill. For 30 years they were in continuous operation, producing over 800 lbs. per card per week. During that time no repairs were necessary except to replace one cylinder fillet.

Soon after this these cards were sold to another mill and again have been in continuous operation, — the last two years on war production on a three shift basis. Repairs, according to last reports, had been negligible and quality and quantity of work were still satisfactory. Thus these machines have served during the Spanish American War, the Philippine Insurrection, the Boxer Uprising, World War I and World War II, — a total of 47 years.

The fact that neither time nor engineering progress has yet conquered these cards demonstrates a widely accepted fact,—that H & B equipment is unusually rugged in construction and efficient in design. That is why many a mill regards its present H & B machines with satisfaction and will buy the same make after the war with confidence.

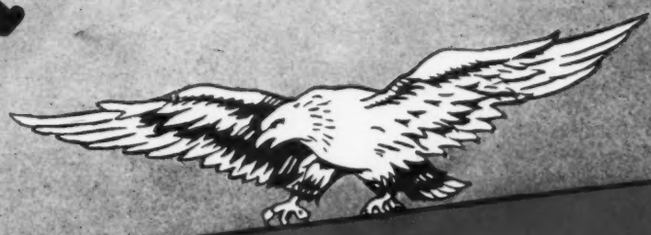
H & B AMERICAN
PLANT AT PAWTUCKET, RHODE ISLAND
Boston Office, 161 Devonshire St.; Atlanta Office, 815 Citizens & Southern National

H&B
TEXTILE MILL MACHINERY



MACHINE COMPANY
Bank Bldg.; Charlotte Office, 1201-3 Johnston Bldg.; Export Dept., United States Machinery Co., 115 Broad St., New York, U. S. A.

COMMUNIQUE



Rubber is fighting a continuous battle on a front extending across five continents and over seven seas.

It is the hardest pressed of all materials engaged in the conflict.

It will win its battle, but not without difficulties that will engage its full fighting power for some time to come.

Dislocation of its ordinary life and pursuits is widespread, but is unavoidable if the ordinary life and pursuits of the nation are to be defended and restored.

It is our aim to do everything possible toward the achievement of ultimate victory.

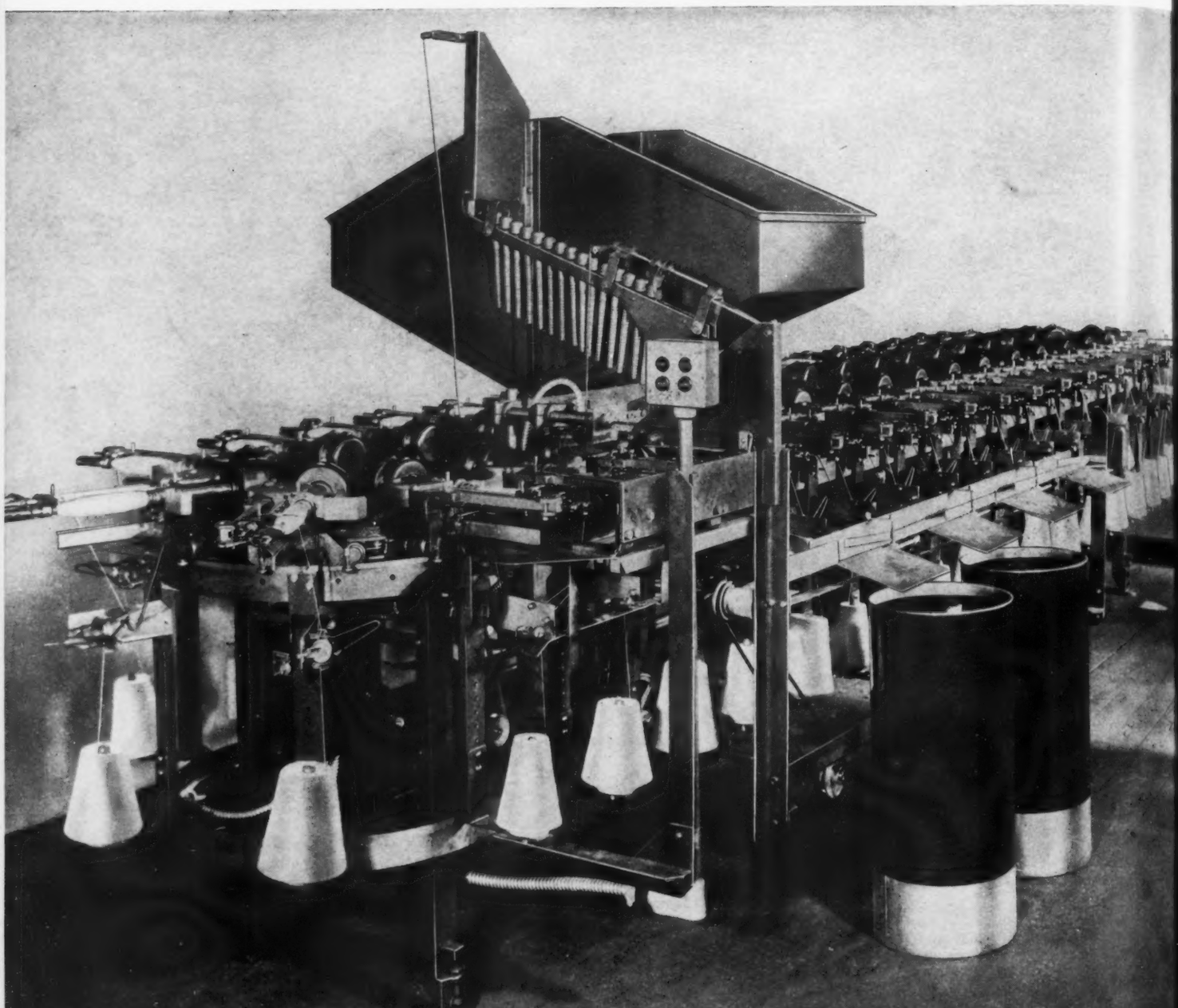
BOSTON WOVEN HOSE AND RUBBER COMPANY

TRADE MARK

BOSTON WOVEN HOSE AND RUBBER COMPANY

CAMBRIDGE, MASS.

AUTOMATIC QUILLER



COMPLETE AUTOMATIC OPERATION

Dump Empty Bobbins in Hopper
the Machine Does the Rest

One Automatic Head Will
Operate 40 to 120 Spindles

LOWEST INVESTMENT COST ★ LOWEST LABOR COST

ABBOTT MACHINE COMPANY

Wilton, N. H.

Southern Representative, L. S. Ligon, Greenville, S. C.

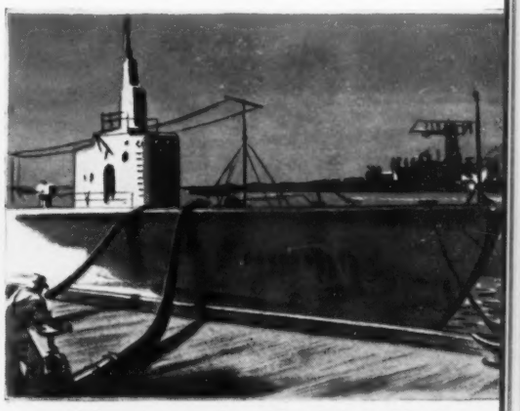
Rubber WILL RIDE TO VICTORY ON THE SEVEN C's

THE "Seven C's" are ***Conservation***, to salvage all rubber for re-use; ***Care***, to make what we have last longer, do more; ***Cooperation***, in use and allocations; ***Compounding***, to produce the best mechanical rubber goods within the limits of supply; ***Construction***, of fabric and reinforcement so that less rubber may do more; ***Collaboration***, of the entire Rubber Industry for the good of all; ***Courage***, to pursue research and development relentlessly.

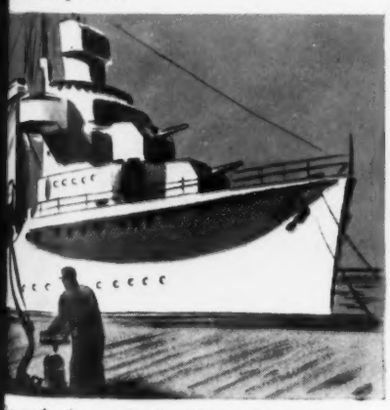
The entire mechanical rubber industry is applying its collective ingenuity, experience and skill from laboratory to shipping platform with results which, at times, may look like miracles to anyone unfamiliar with the sustained research which is an inherent part of the story of Rubber.

a single airplane there are hundreds of ber parts, including hose for fuel, oil lines d hydraulic controls; packings, and vi- tion dampeners.

Tanks need rubber at many points—rubber that will withstand heat, cold, oil, abrasion.



Submarines require acid-resisting rubber for battery compartments; other kinds of rubber in gaskets, mountings, and for scores of special applications.



housands of pounds of rubber go into every rship at hundreds of places from propeller ft to gun decks and fire control tower.

Trucks and gun carriages require rubber for hydraulic brake parts, for shock absorption, and for other vital uses.

50th YEAR OF RESEARCH

THE half century mark now reached at MANHATTAN finds the thousands who work within its several plants too busy to take full note of this milestone in a long record of achievements. Among these are: Compensated Power Transmission Belting in which all plies have equal stresses; the Extensible Tip for prolonging the life of endless belts; the Homoflex hose construction principle which increases the flexibility and multiplies the life of rubber hose—often many times; Radio-Active treated fire hose that resists mildew; first to adapt synthetic rubber in oil-proof rubber products; Vibration Dampener Bushings for portable grinding wheels.

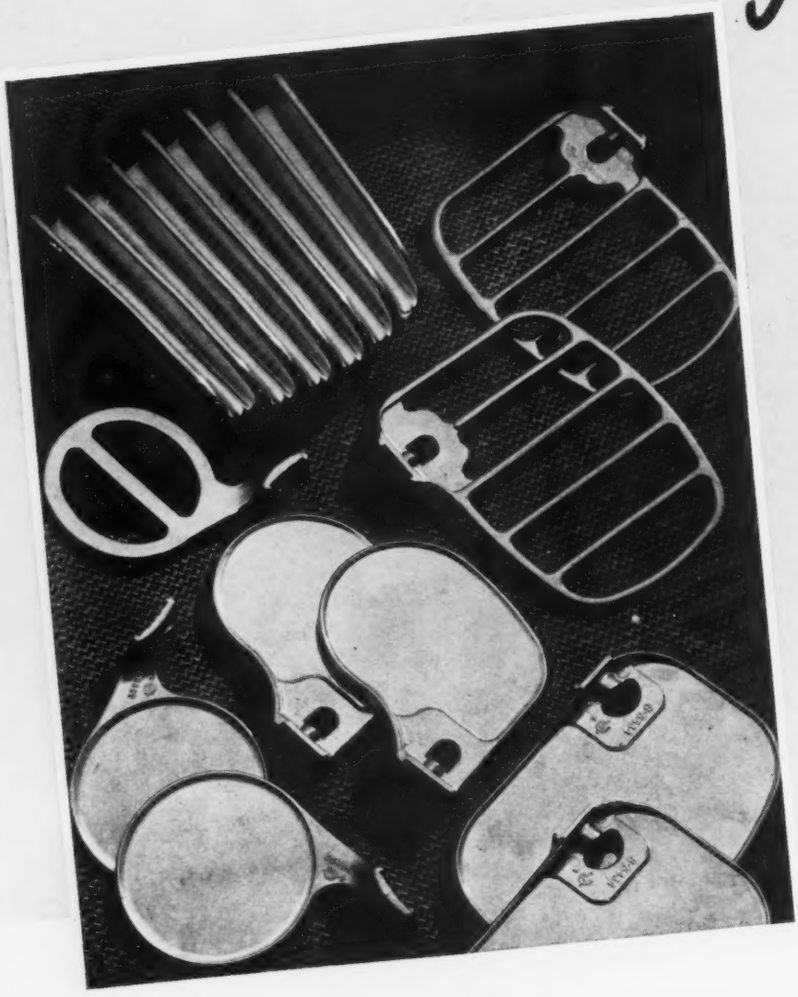
These are but a few of the MANHATTAN developments which are contributing to conservation of rubber by prolonging service life, and to greater production.

THROW YOUR SCRAP INTO THE SCRAP!

KEEP AHEAD WITH MANHATTAN

THE MANHATTAN RUBBER MANUFACTURING DIVISION
of RAYBESTOS-MANHATTAN, INC.
EXECUTIVE OFFICES PASSAIC, NEW JERSEY

Perhaps they only need a "face lifting"



Worn parts can often be built up and salvaged by metallizing.

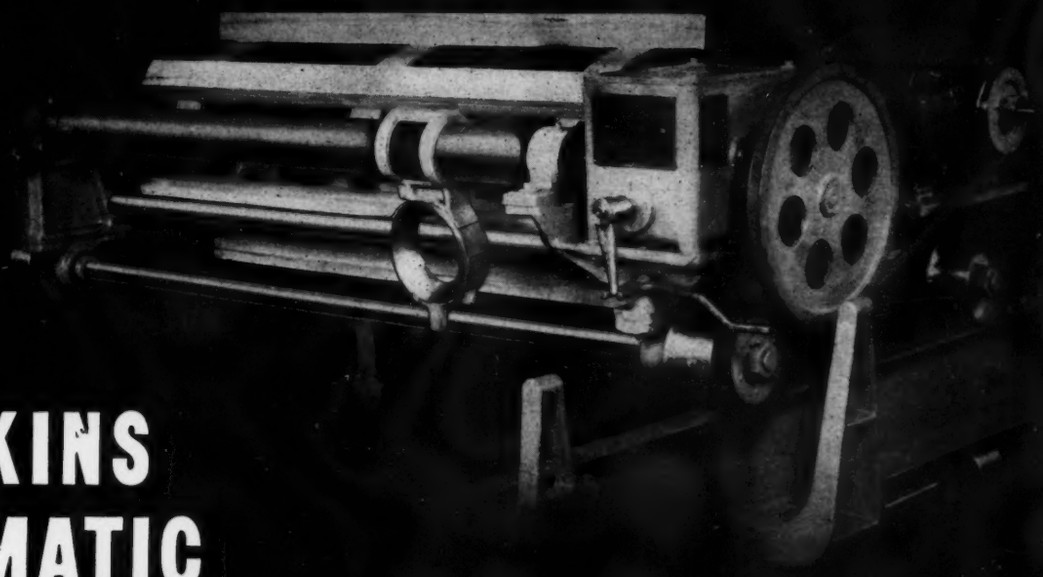
Keep an eagle eye on mill equipment that's being driven hard for war production. Alcoa engineers will gladly help you decide how to get maximum life from Aluminum Alloy equipment that can't be replaced because of priorities elsewhere.

Some of your Aluminum parts may have become scuffed or scratched in service; separator blades, bobbins, pirns, spools, stocking forms, drying rods and tubes. Polishing is probably all they need to make them good as new. It may be wise, however, to take a few at a time out of service to be given an Alumilite finish (process patented). This gives them a smooth, hard surface that is highly resistant to wear and corrosive attack.

Many knitting machine and loom parts, which would be replaced in normal times because of wear, can be rebushed or brought up to size by metallizing. Painting or cleaning and repainting hoods, ducts and housings will prolong their life. Whatever your problem, remember that Alcoa engineers are here to help you solve them.

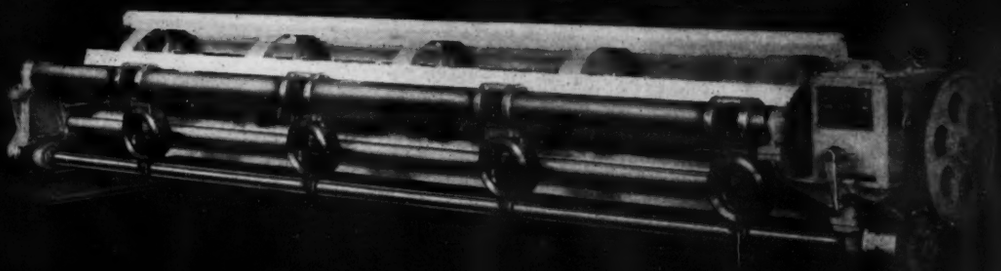
ALUMINUM COMPANY OF AMERICA, 1942 Gulf Building, Pittsburgh, Pennsylvania.

ALCOA ALUMINUM



PERKINS AUTOMATIC BIN PILERS

PATENTED



You cannot afford to pile by hand

B. F. PERKINS & SON, Inc.

ENGINEERS AND MANUFACTURERS

HOLYOKE, MASS.

Helping Industry Meet the Acid Test

1. ACIDS HOLD A FRONT LINE POST in America's production battle. In munitions factory, metal plant, oil refinery and textile mill . . . acid tanks, pipe lines and heating coils must resist the attack of industrial acids . . . keep them on the job without shut-downs for repairs . . .

2. THAT'S WHY TELLURIUM LEAD is so well-suited for such equipment. This new alloy laughs in the face of hot sulphuric and other acids. A high-temperature lead, it has great resistance to acid corrosion — even at temperatures approaching its melting point. Thus it helps equipment stand up longer — helps keep it on a 24-hour shift . . .

3. EQUALLY IMPORTANT, TELLURIUM LEAD *strengthens under stress* — actually "work-hardens". Tough to start with, it gets *tougher* when hammered, rolled, bent or stretched. Thus joints and turnover points are less subject to cracking . . . buckling and creeping are minimized . . . and resistance is increased to vibration and to fracture from repeated temperature changes . . .

4. TELLURIUM LEAD COMBINES these important new advantages with the well-known properties of St. Joe chemical lead because it is a special alloy of this time-tested metal and Tellurium. Fabricated in sheets, pipes and coils, its use in vital industrial spots is helping Liberty's Arsenal "keep 'em rolling".

NATIONAL LEAD COMPANY—New York, Baltimore, Buffalo, Chicago, Cleveland, Cincinnati, St. Louis; National-Boston Lead Co., Boston; John T. Lewis & Bros. Co., Philadelphia; National Lead & Oil Co. of Penna., Pittsburgh; Georgia Lead Works, Atlanta; American Lead Corp., Indianapolis; Master Metals, Inc., Cleveland; The Canada Metal Co., Ltd., Toronto, Montreal, Winnipeg, Vancouver.

TELLURIUM LEAD

• A NATIONAL LEAD COMPANY PRODUCT •

Recognized for value

wherever knitting needles are used is this famous red and green box. To knitters throughout the industry it means value and fine performance. For Torrington steel is selected with the utmost care from special sources . . . and Torrington methods of manufacture are *machine* methods, developed by men who have made a life-long study of the most accurate ways of controlling the quality of needles. These are some of the reasons why Torrington Needles are famous for their performance records and why good knitters look for the red and green box.

Spring Beard

TORRINGTON NEEDLES

SINKERS · DIVIDERS · SPLIT DIVIDERS

IN WAR EQUIPMENT— AS EFFICIENT AS EVER

TODAY it may be an anti-tank gun, stripped for check-up…tomorrow, the still-warm "heart" of a fighter plane. So it goes. Fighting equipment gets tough treatment in modern warfare. So the need for frequent servicing and constant parts replacement is understandable, under such conditions.

But there is one vital part which maintenance men seldom have to touch, although they notice it often enough. The Torrington Needle Bearing, "changed over" to production-for-war, is again demonstrating its efficiency—and adaptability—in applications where its unique advantages mean more today than ever.

Its efficient system of lubrication, for example, which requires only occasional oiling, is reducing the need for maintenance attention or replacement. Its high capacity assures long bearing life, even in continuous operation under heavy loads.

Every feature of the Needle Bearing, significantly, is filling some important wartime need. Its small size is saving weight and critical materials; its remarkable ease of installation is cutting assembly time; its simplified design is eliminating extra parts and assembly steps, with low coefficient of friction assuring smooth performance.

When Victory may hang on the amount of time it takes to service fighting equipment, it is not surprising that maintenance men these days are finding Torrington Needle Bearings in more and more of America's war materiel.

IF YOU HAVE A PROBLEM *which the Needle Bearing might solve, Torrington engineers can be of valuable assistance in adapting its advantages to your needs. You are welcome to their experience, as well as the information on Needle Bearing capacities and sizes in Catalog No. 116.*

THE TORRINGTON COMPANY
TORRINGTON, CONN., U. S. A. • *Est. 1866*
Makers of Needle and Ball Bearings

New York · Boston · Philadelphia · Detroit
Cleveland · Seattle · Chicago · Los Angeles
San Francisco · Toronto · London, England

TORRINGTON NEEDLE BEARING

Every feature fills a wartime need

There is a **BOND** *between them*

BOND is a strong word. We say there is a BOND between two firm friends—something which holds them together. The BOND between pigment and fabric fiber is the major achievement of modern pigment-printing and pigment-dyeing with Aridye* Textile Colors. Only when this lasting BOND is attained, will the finished, colored fabric meet the high standards of the industry.

How to be Sure of this BOND

The firm BOND between the pigment and the fiber is an outstanding accomplishment of modern pigment-printing and pigment-dyeing. Users of Aridye Textile Coloring Materials know that this firm BOND results only when:

1. *Technically correct pigment colors are used*
2. *The colors are properly applied to the fibers of the cloth*
3. *The colored fabric is then adequately cured.*

If these conditions are met, the resulting colored fabric, with the pigment firmly BONDED to the fabric fibers, will meet the standards for high quality merchandise. The selection of the right pigment, the exact form of the pigment, the method of dispersing, the tenacity of the binder and the proper curing of the fabric have all been determined by research in the Laboratories of Aridye Corporation and proven by actual production experience.

Aridye colors for pigment-dyeing are emulsions. The pigments are dispersed in a solution of synthetic resins into which water is emulsified. This emulsion remains stable; consequently there is no exhaustion of the bath, as all components are taken up together by the fabric in the same proportions.

Meet Industry's High Standards

Aridye colors, properly applied and adequately cured, meet or exceed the high standards of the textile industry for washfastness, lightfastness and scrub tests. Certain Aridye colors for pigment-printing or pigment-dyeing can be selected which will withstand *300 hours* in the fadeometer without noticeable letdown in shade. Comparative tests, covering Mildew Effectiveness, Resistance to Abrasion, Chlorine Retention, Air Porosity and Presence of Primary Irritating Substance, have been made by the United States Testing Company, Incorporated. Full copies of these reports will be sent on request.

Aridye Colors Are Available Now

Aridye pigmented emulsions are available *now*. For additional information about this method of printing and dyeing with fast pigments, write to Aridye Corporation, a Subsidiary of Interchemical Corporation, Fair Lawn, New Jersey.

Not ONE, not TWO, but

3

conditions govern the Bond between fabric fiber and pigment

1 Technically correct pigmented colors
2 Proper application to the fibers
3 Adequate curing of the fabric

No shortcut procedure can produce a satisfactory BOND

*Reg. U. S. Pat. Off.

Aridye

TEXTILE COLORING MATERIALS

ARIDYE CORPORATION • A subsidiary of Interchemical Corporation • FAIR LAWN, NEW JERSEY • ROCK HILL, SOUTH CAROLINA • PROVIDENCE, RHODE ISLAND

WHY RAYON MAKES TOUGH TIRES

HEAT, the enemy of all pneumatic tires, becomes a hazard when cars go into battle. All speed limits are off, and as increased speed means increased heat, chances for blowouts are multiplied.

Add to speed the sizzling sands of a desert, the gouging and rending of boulders, the shock of impact as wheels jolt into and out of depressions, and you can understand why it takes an extraordinary kind of tire cord to withstand such torture.

Long before this country went to war, tire manufacturers started looking for a material that could really take punishment. Working in close harmony with the scientists of the tire manufacturers, together we initiated a research program to develop a cord which could withstand heat and shock.

After experimenting with many kinds of materials, we at American Viscose contributed materially to the development of a special type of *rayon* fiber. This fiber has high resistance to heat. It has toughness—high tensile strength and enough "give" to distribute the load through the tire carcass.

Because this type of rayon has toughness, it is able to take great shocks. The faster you apply the load, the greater resistance it has. This translates itself into safe landings for bombers and huge transport planes, and blowout-resistance for the tires of combat cars and trucks.

Right now, tires with rayon cord for civilian use are hard to obtain. They've gone to war. But after this war is over you can depend upon rayon to give you longer life, greater mileage, and more protection in the tires for your car.

The development of a special rayon fiber for tire manufacture is only one of the research achievements of American Viscose Corporation. We are constantly at work, evolving new fibers which will solve problems for people and industry.

THIS CROSS-SECTION OF A TYPICAL RAYON-CORD TIRE SHOWS YOU HOW RAYON PERMITS A MUCH THICKER TREAD, BUT MUCH THINNER SIDEWALLS.

Because rayon builds up less heat than ordinary materials, it is possible to coat tire treads with a heavier layer of rubber, while using less rubber on the tire wall. Since the tread of a tire is less than one-third of the dimension of the entire tire, this actually results in a saving of rubber while creating a stronger, lighter-weight, longer-lasting tire.

FOUR-PLY SERVICE

1. **FIBER RESEARCH**—Helps you get the right yarns.
2. **FABRIC DEVELOPMENT**—Helps you design new fabrics.
3. **MILL TECHNIQUE**—Helps solve mill problems.
4. **SALES ASSISTANCE**—Helps sell finished products.

Sales Offices: New York, N. Y.; Charlotte, N. C.; Providence, R. I.; Philadelphia, Pa.

Plants: Marcus Hook, Pa.; Roanoke, Va.; Lewistown, Pa.; Nitro, W. Va.; Parkersburg, W. Va.; Meadville, Pa.; Front Royal, Va.

CROWN TESTED AND APPROVED RAYON FABRIC

AMERICAN VISCOSE CORPORATION

Producers of CROWN* *Rayon Yarns and Staple Fibers*

*T. M. Reg. U. S. Pat. Off.

Copr. 1942—American Viscose Corp.

Check List MONSANTO TEXTILE CHEMICALS of Controlled Quality

	DESCRIPTION	USES
Acetic Acid	56%, 70%, 80%	Fixing and exhausting of dyes
Alcohol	specially denatured, completely denatured	dye solvent
Aluminum Chloride	neutral salt, low in iron content; solutions have an acid reaction but contain no free acid	Carbonizing fine wool and colored goods
Ammonia, Anhydrous	100% NH_3	dyeing; emulsifying; neutralizing
Ammonia, Aqua	16°, 18°, 20°, 24°, 26° Baume	wool scouring, dyeing; emulsifying, neutralizing
Ammonium Phosphates	Di and Mono. White crystalline solids	flameproofing
Ammonium Ethyl Phosphate	75% solution colorless	flameproofing
Amyl Acetate	Standard high test; special	organic solvent
Butyl Acetate	normal	organic solvent
Caustic Soda	liquid 50%, 70%	rayon mfg., mercerizing; kier boiling; solubilizing dyes
Chlorine	liquid	bleaching
Dibutyl Phthalate	clear, oily liquid	lacquer plasticizer
Disodium Phosphate	anhydrous	dyeing; silk weighting
Dipotassium Phosphate	60% solution colorless liquid	wool lubricant & fulling soap additive after carbonizing
Ethyl Acetate	85%-90% ester content	organic solvent
Ferric Sulfate	91% $Fe_2(SO_4)_3$	oxidizing
Glauber's Salt	43% Na_2SO_4 available	dye leveling
Lacquers	nitrocellulose base; synthetic resin base	mfg. close-base artificial leather; pigment printing
Merclor (sodium hypochlorite)	22° Baume, 12% available Cl by volume	bleaching, oxidizing
Muriatic Acid (hydrochloric)	18°, 20°, 22° Baume	carbonizing, scouring

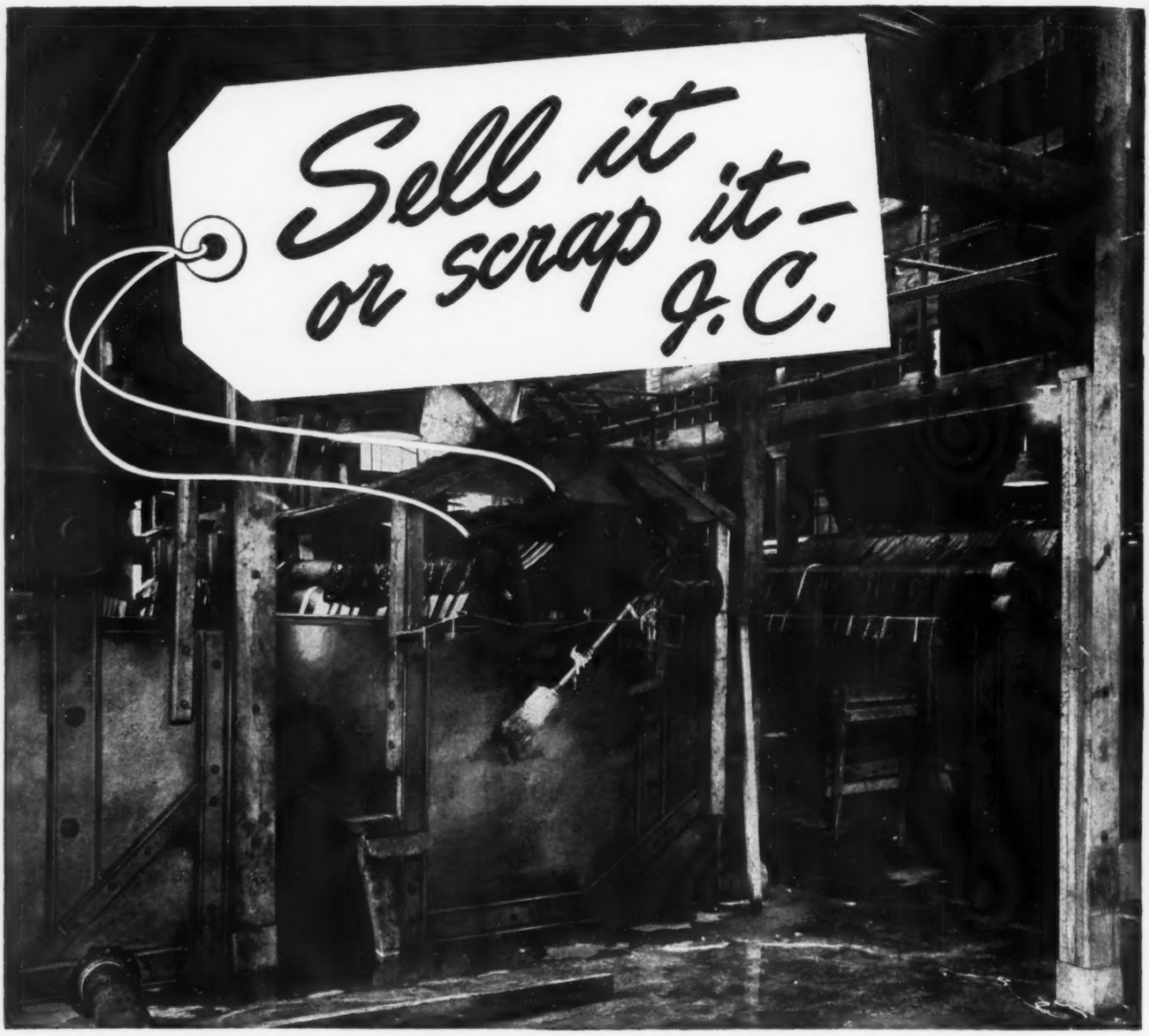
	DESCRIPTION	USES
Santicizer B-16	Butyl Phthalyl Butyl Glycollate	Lacquer plasticizer
Santicizer E-15	Ethyl Phthalyl Ethyl Glycollate	Lacquer plasticizer
Santicizer M-17	Methyl Phthalyl Methyl Glycollate	Lacquer plasticizer
Santobrite	Sodium Pentachlorophenate	Mildew-proofing
Santophen 20	Pentachlorophenol	Mildew-proofing
Santomerse	powder; liquid; flakes; paste	wetting and dispersing agent in dyeing; detergent for kier boiling, scouring
Sodium Bisulfate (nitre cake)	unground; ground; globular	antichlor in bleaching; mordant and discharge in printing, dyeing
Sodium Sulfide	concentrated, 60-62% Na_2S; crystal, 31% Na_2S; liquid, 20% Na_2S	mfg. application sulfur dyes
Sodium Sulfate, anhydrous	white granular crystals —99% Na_2SO_4 available	dye leveling
Sodium Sulfite, anhydrous technical	tan or slightly pink crystalline powder; minimum 93% sodium sulfite	bleaching delicate textiles
Sodium Potassium Ethyl Phosphate Solution, "Sopet"	a colorless liquid	wool spinning lubricant
Sodium Potassium Ethyl Phosphate Solution, "Sopam"	a colorless liquid	wool spinning lubricant
Sulfuric Acid	58°, 60°, 66° Baume, 98% and Oleum, mono-hydrate	carbonizing wool, dyeing, scouring
Tetrapotassium Pyrophosphate	Pyrophosphate salt of very high solubility	addition agent to textile oils
Tetrasodium Pyrophosphate	crystalline; anhydrous	in kier boiling, dyeing
Tricresyl Phosphate	colorless liquid	lacquer plasticizer
Trisodium Phosphate	white, crystalline, uniformly sized, quickly soluble in water	kier boiling; scouring

HELP! **Prompt return of empty tank cars, carboys and returnable drums will help speed your next shipment of Monsanto chemicals . . . by helping to relieve critical shortages in shipping equipment.**

MONSANTO CHEMICAL COMPANY • ST. LOUIS

MONSANTO CHEMICALS

SERVING INDUSTRY...WHICH SERVES MANKIND



"J. C." is the vice president in charge of operations and he knows what it takes to get a job done. September 1 he took another important post: *Chairman, Scrap Committee.*

There's a mighty good reason for a vice-president to be in charge of scrap collection these days . . . Millions of tons of scrap iron are *desperately needed* to keep war production at the peak. And it's hard to get superintendents, foremen and workers to take the responsibility for scrapping unused equipment that "may" be used some day.

Yes, it's up to a top executive to decide whether obsolete or unused textile machines should be stored or sold. War production officials suggest that he follow this yardstick: "If it hasn't been used for 3 months and if someone can't prove that it's going to be used in the next 3, either find a use for it or scrap it."

Remember, the scrap you collect in your plant may save the lives of American fighting men and shorten the war. Remember too, this is not a campaign. It must go on as long as the war lasts. Get in the scrap that will make new steel for the tanks, guns, ships and planes that point to Victory. The American Rolling Mill Company, 3351 Curtis St., Middletown, Ohio.

This advertisement is in support of the Salvage Program of the Conservation Division of the War Production Board.

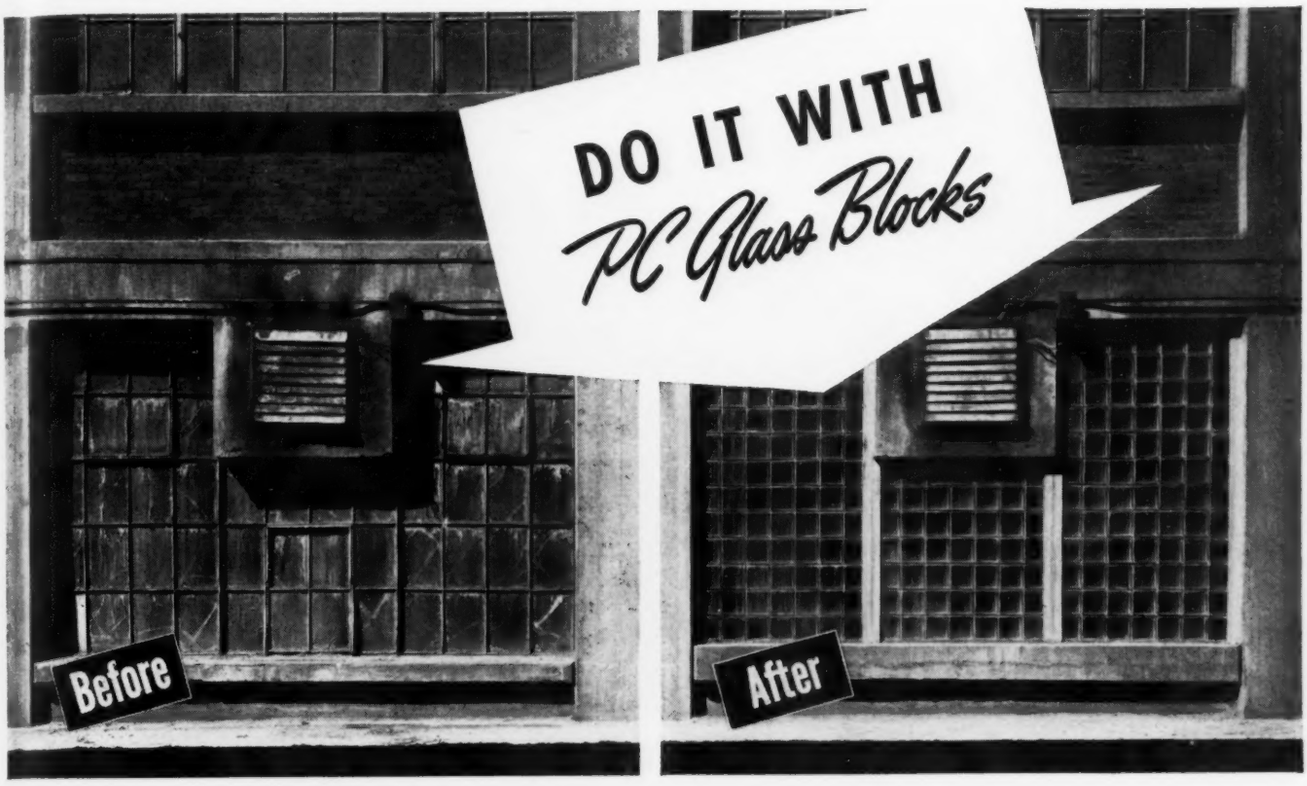
ARMY E NAVY

ARMCO

TURN IN ALL YOUR SCRAP

Producers of ARMCO Stainless Steel and other special-purpose sheet metals for the textile-equipment industry.

When sash needs replacement . . .



Save metal . . . improve plant efficiency

IF you have window sash that has rotted or corroded beyond repair, there's no need to hold up replacement awaiting critical materials. Do the job with PC Glass Blocks. They are available for immediate shipment. And because the panels consist of glass and mortar, they conserve metal that is so vital to the war effort.

You cure sash troubles once and for all when you use PC Glass Blocks. There's nothing in them to rot or corrode. They stay weather-tight under the most severe conditions. And they are not harmed by highly acid and humid atmosphere so common in textile plants. As a result, maintenance costs are reduced to a minimum.

INCREASED OPERATING EFFICIENCIES

PC Glass Block panels flood interiors with softly diffused daylight. Dirt infiltration is eliminated. Because of their high insulation value, PC Glass Blocks make temperature and humidity control easier, more exact. Cleaning is simplified — and the whole panel presents a clean, attractive appearance.

Get the facts about PC Glass Blocks now. Send for our free book that shows how plants in many branches of industry have used them successfully—that shows the many attractive patterns and provides data on light transmission and insulation. If you wish, our representative will help you plan construction to avoid use of hard-to-get materials—with no obligation or cost involved.

"PITTSBURGH" stands for Quality Glass

PITTSBURGH PC CORNING

GLASS BLOCKS

Distributed by

PITTSBURGH PLATE GLASS COMPANY

and by W. P. Fuller & Co. on the Pacific Coast

Pittsburgh Corning Corporation
2138-2 Grant Building, Pittsburgh, Pa.
Please send me your free, illustrated book that tells how PC Glass Blocks have been used successfully in many industrial plants.

Name_____

Address_____

City_____ State_____

A Miller Message to help conserve War Production Manpower

Better Lighting could have saved this hand!

11,600 industrial workers are killed or injured *every day!* Many of these tragic accidents happen simply because workers cannot see clearly and sharply at all times. Read how MILLER lighting can help you save lives, protect skilled labor, and speed war production in your plant . . .

Last year industry lost 42 million man-days through injuries alone! Think of the staggering cost to the war effort.

Better lighting is one positive way to reduce industrial accident hazards. In one war plant, for example, accidents decreased 11% after a new lighting system was installed. In another the frequency of minor accidents dropped nearly 54% when illumination was increased 18 foot candles.

These figures are from WPB's useful handbook, "Plant Efficiency."

MILLER 50 FOOT CANDLER or 100 FOOT CANDLER can put an adequate, clear-seeing level of fluorescent *daylight* over every working surface in your plant. Watch what that does for worker morale and your safety program!

Or it may be some other type of MILLER lighting . . . incandescent or mercury vapor, for instance... is more ideally suited to your individual needs. MILLER works with all light sources and is in an unbiased position to give you the one best lighting system for your plant and employes.

MILLER engineers are located in principal cities. Ask to have one call for a serious discussion of how better lighting can help you now.

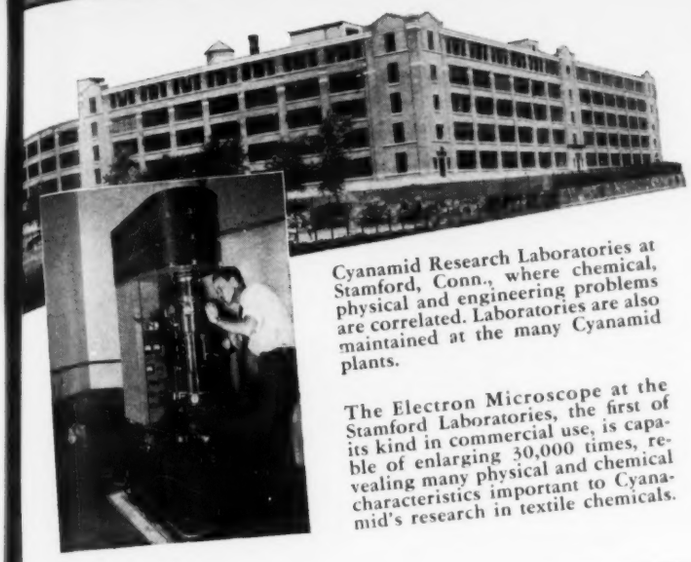
BUY U. S. WAR BONDS

Pioneers in Good Lighting since 1844

THE MILLER COMPANY
MERIDEN · CONNECTICUT

RESEARCH!

THE EXTRA VALUE IN CYANAMID QUALITY PRODUCTS FOR THE TEXTILE INDUSTRY



Cyanamid Research Laboratories at Stamford, Conn., where chemical, physical and engineering problems are correlated. Laboratories are also maintained at the many Cyanamid plants.

The Electron Microscope at the Stamford Laboratories, the first of its kind in commercial use, is capable of enlarging 30,000 times, revealing many physical and chemical characteristics important to Cyanamid's research in textile chemicals.

The extraordinary demands of the times are such as to tax the ingenuity of all industry. The textile industry, too, is faced with additional burdens on its capacities, and problems as to its processes and materials. Only the best is equal to the job to be done . . . and the importance of the proper selection of raw materials to meet the new requirements is greater than ever before.

At Cyanamid, research in textile chemicals, always an important phase of the Company's activities, is directed toward advancing the means and methods of meeting present conditions, and conditions that may be faced in the future. The many chemical specialties Cyanamid supplies . . . sulphonated oils, penetrants, softeners, finishes, sizing compounds, wetting agents and others . . . are subjected to critical examination for ways to improve quality and to broaden their usefulness. New products are developed to meet new conditions and to replace others made unavailable due to the emergency. In this work Cyanamid coordinates the most modern chemical, physical testing, and analytical equipment with the talents of a highly trained laboratory staff . . . a procedure that has succeeded through the years in producing better products at lower costs and many new products of timely application to the needs of users of chemicals in industry.

Cyanamid research is devoted not only to matters of materials but also to methods and equipment as well. Cyanamid's chemists, technicians, and representatives, thoroughly trained in the fields they serve, are prepared to examine, test and counsel in relation to specific conditions in a manufacturer's own plant, and help him solve emergency and "chronic" production problems. In any matter relating to the selection and use of textile chemicals, Cyanamid is "on call" to assist you in the most practical and economical way. There is no obligation.

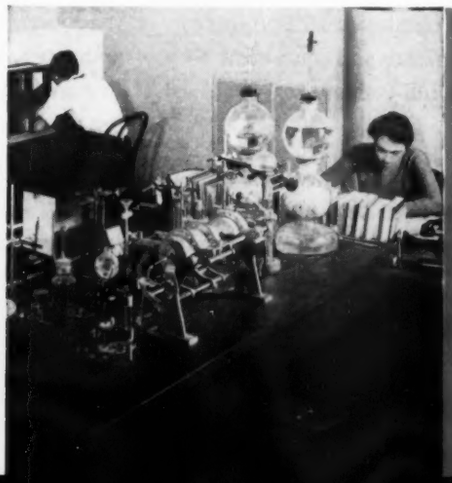
The Launderometer and Heat Curing Box for testing of resin applications are representative of the modern equipment in Cyanamid's Textile Chemicals Laboratory at Stamford.

SULPHONATED OILS; PENETRANTS; SOFTENERS; FINISHES; SIZING COMPOUNDS; DECERESOL* WETTING AGENTS

*REG. U. S. PAT. OFF.

A section of the Physical Testing Laboratory.

A corner of the Micro-Analytical Laboratory.

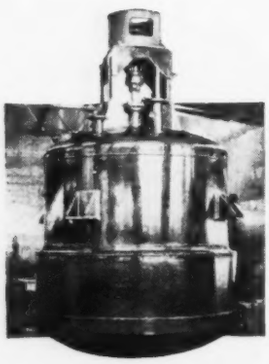


AMERICAN CYANAMID & CHEMICAL CORPORATION

A UNIT OF AMERICAN CYANAMID COMPANY

30 ROCKEFELLER PLAZA · NEW YORK, N. Y.

DISTRICT OFFICES: 3333 Wilkinson Boulevard, Charlotte, N. C.; 89 Broad St., Boston, Mass.; 401 N. Broad St., Philadelphia, Pa.; Russell & Bayard Streets, Baltimore, Md.; 550 Leader Building, Cleveland, Ohio; 20 N. Wacker Drive, Chicago, Illinois; Miller Road, Kalamazoo, Michigan; 931 Fisher Building, Detroit, Mich.; 900 Shell Building, St. Louis, Missouri; Azusa, California



This jacketed agitator kettle for handling chlorinated hydrocarbons is typical of equipment used in the dye industry. Made of Nickel-clad steel and solid Nickel, so only Pure Nickel comes in contact with the highly corrosive liquids.

Long before the word "Nazi" was coined, a young American industry fell victim to the strategy it typifies. The German Dye Cartel, under cover of liberal U. S. laws, secured patents on well-selected key products . . . successfully blocked development of the struggling American coal-tar chemical industry.

Came war, blockade, rocketing prices, and a complete shut-off of imported materials. Finally, Government action released foreign-owned patents . . . gave the U. S. industry its long awaited opportunity.

American dye men lost no time! In 1916-17 as many as 74 new "dye manufacturers" along with the seven existing companies, began to work wonders. Despite war-born material shortages and lack of experience and equipment, they developed a full-fledged, well-equipped American industry . . . built up annual output from less than $3 million in 1914 to $122 million in 1940.

This immense achievement stands us today in good stead. For dyes are dynamite! Toluene, analine, salicylic acid, phenol, chlorine...these and other materials of modern warfare are the dye maker's stock-in-trade. To them must go the credit for developing sources of basic materials now vitally needed for explosives, rubber, plastics and other war supplies.

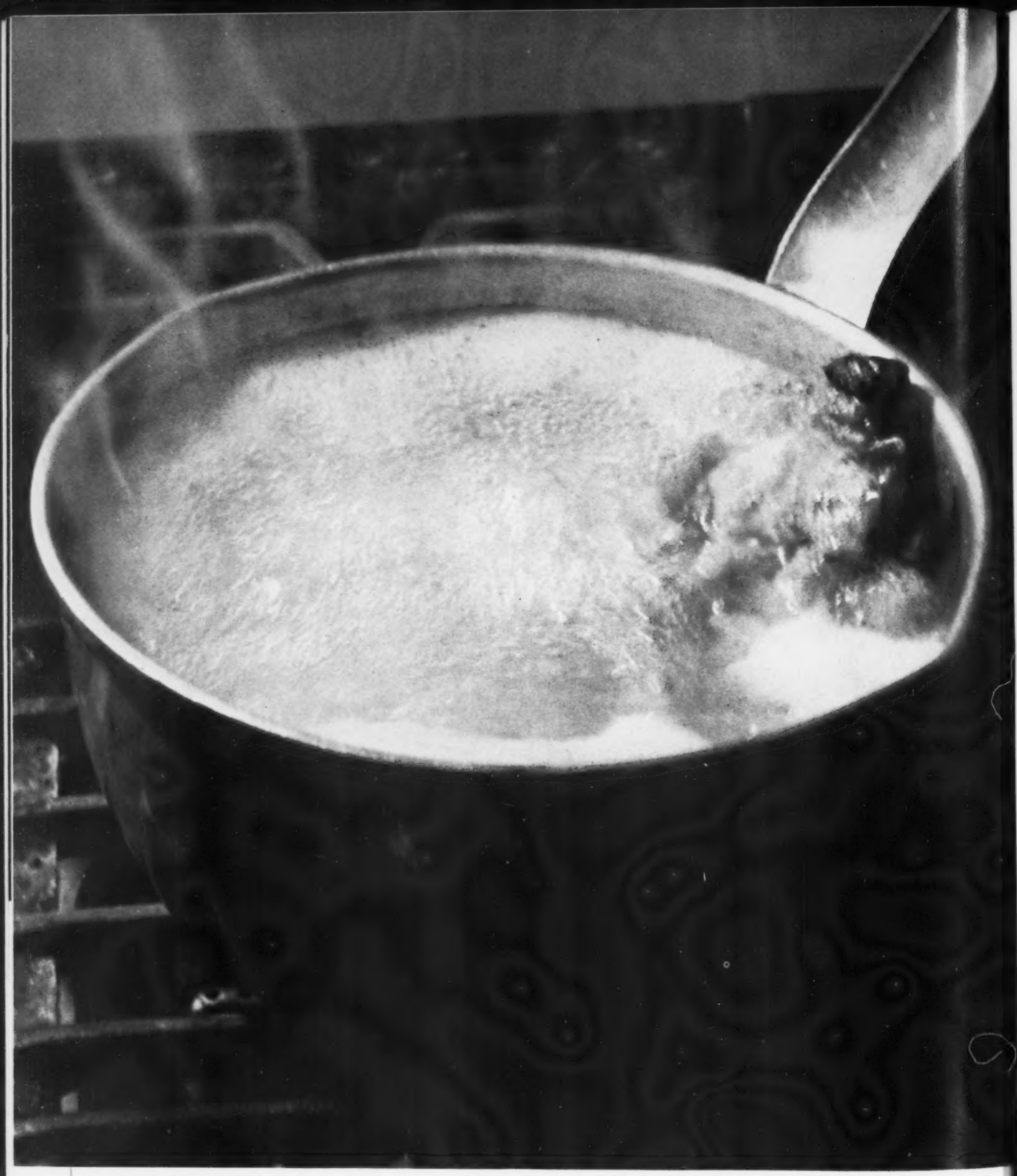
An important factor in this impressive performance are Monel, Nickel and other INCO Nickel Alloys. Strong, tough and durable, they are also highly resistant to the many corrosives encountered in this field. As in other important industries, INCO Nickel Alloys are contributing to the drive for Victory.

THE INTERNATIONAL NICKEL COMPANY, INC. • 67 Wall Street, New York, N. Y.

MONEL "K" MONEL "S" MONEL "R" MONEL NICKEL "Z" NICKEL INCONEL

Firelight glamour . . . Every woman knows that the captivating loveliness of her stockings is in the texture of the fabric. Every hosiery manufacturer knows that good needles are indispensable in achieving even texture in full-fashioned knitting. Keep your knitting machines young and effective with TMW Needles. . . . *And remember: Regular Reneedling Pays! Let us put your needle bars in shape for faster, more accurate, more profitable knitting.*

TEXTILE MACHINE WORKS • READING, PA.



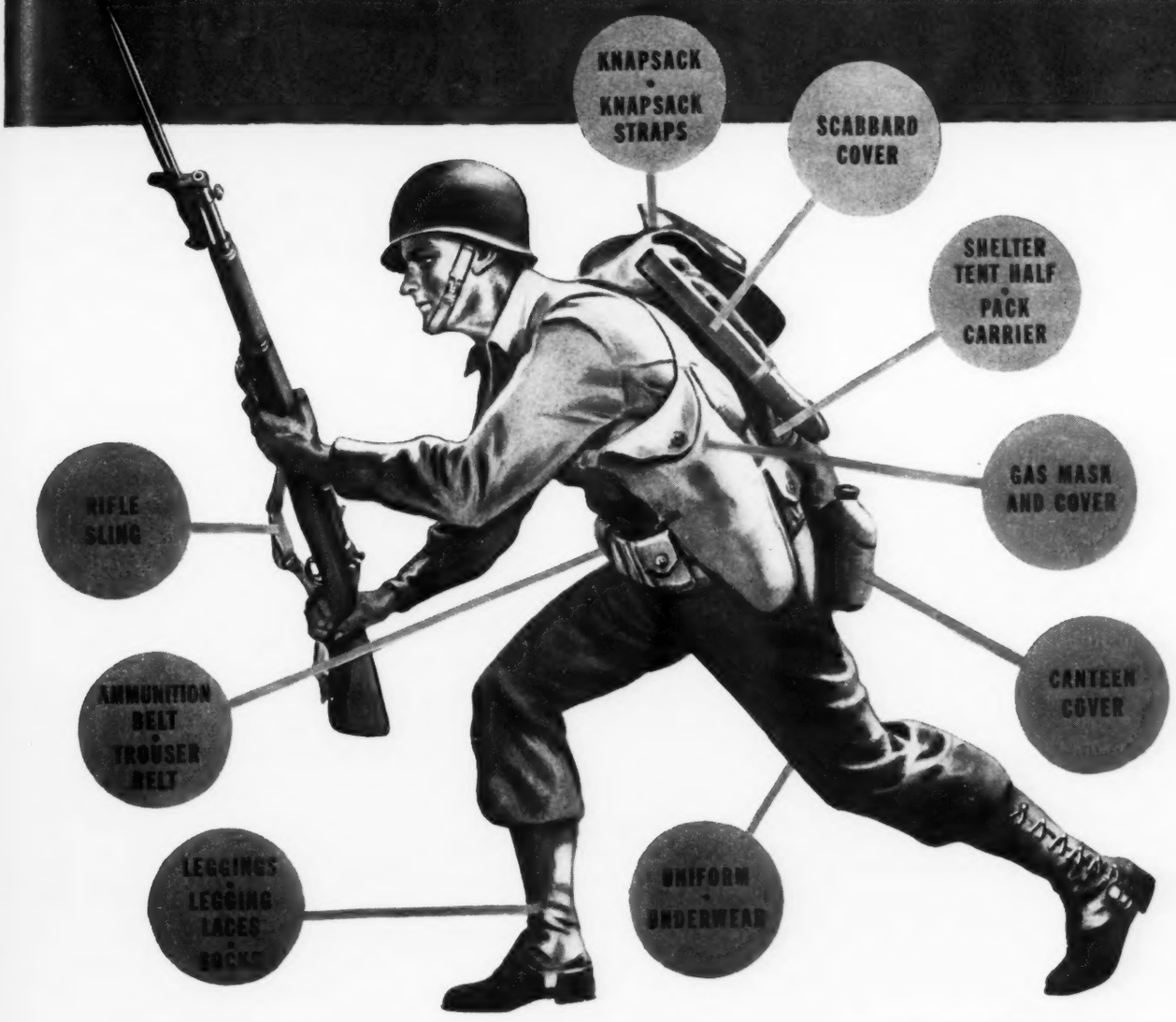
"Keep the pot boiling."
DICKENS

U. S. Navy "E" — awarded Textile Machine Works July 25, 1941, for outstanding production of Naval Ordnance. The white star is evidence of continuing superior performance.

Until the Victory is Won! . . . The men and experience back of Reading Full-Fashioned Knitting Machines are enlisted for the duration. We *cannot* give you new machines — but we *will* do the next best thing: Our engineers will do their utmost to help you keep your present equipment at the point of highest efficiency. *Let us tell you about our complete reconditioning service and what it means in terms of better fabrics and bigger profits.*

TEXTILE MACHINE WORKS • READING, PA.

BIBB YARNS and FABRICS go to war with the help of AIR CONDITIONING



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Enlisted for Victory—Bibb Textiles and Carrier Air Conditioning!

Seine twine for camouflage nets . . . rubberized canvas duck for collapsible boats . . . duck for portable aircraft shelters . . . waterproof duck for protective coverings for vital war materiel . . . cord for parachute shrouds . . . heat-resistant bonded fiber cord to reinforce and lengthen the life of rubber . . . yarns to insulate the wires which are "the nerves of War" . . . cord for web rifle slings and cartridge belts, packs, pack straps, bayonet sheaths . . . dyed cotton yarns for webbing in parachute harness, gunners' belts, bomb slings . . . leno fabric for airplane-towed training targets . . . cotton yarns for the 17 pounds of cotton clothing and equipment issued to every American soldier. Bibb yarns and fabrics go to war!

Carrier equipment in Bibb's plants is helping to speed this tremendous war production. Carrier humidification is used in many processes in all 10 mills in Macon, Columbus, Reynolds and Porterdale, Ga. Bibb research and testing laboratories are largely air conditioned by Carrier.

CARRIER CORPORATION, SYRACUSE, N.Y.

This coveted honor, the Army-Navy "E" pennant was awarded to Carrier Corporation for excellence in war production.

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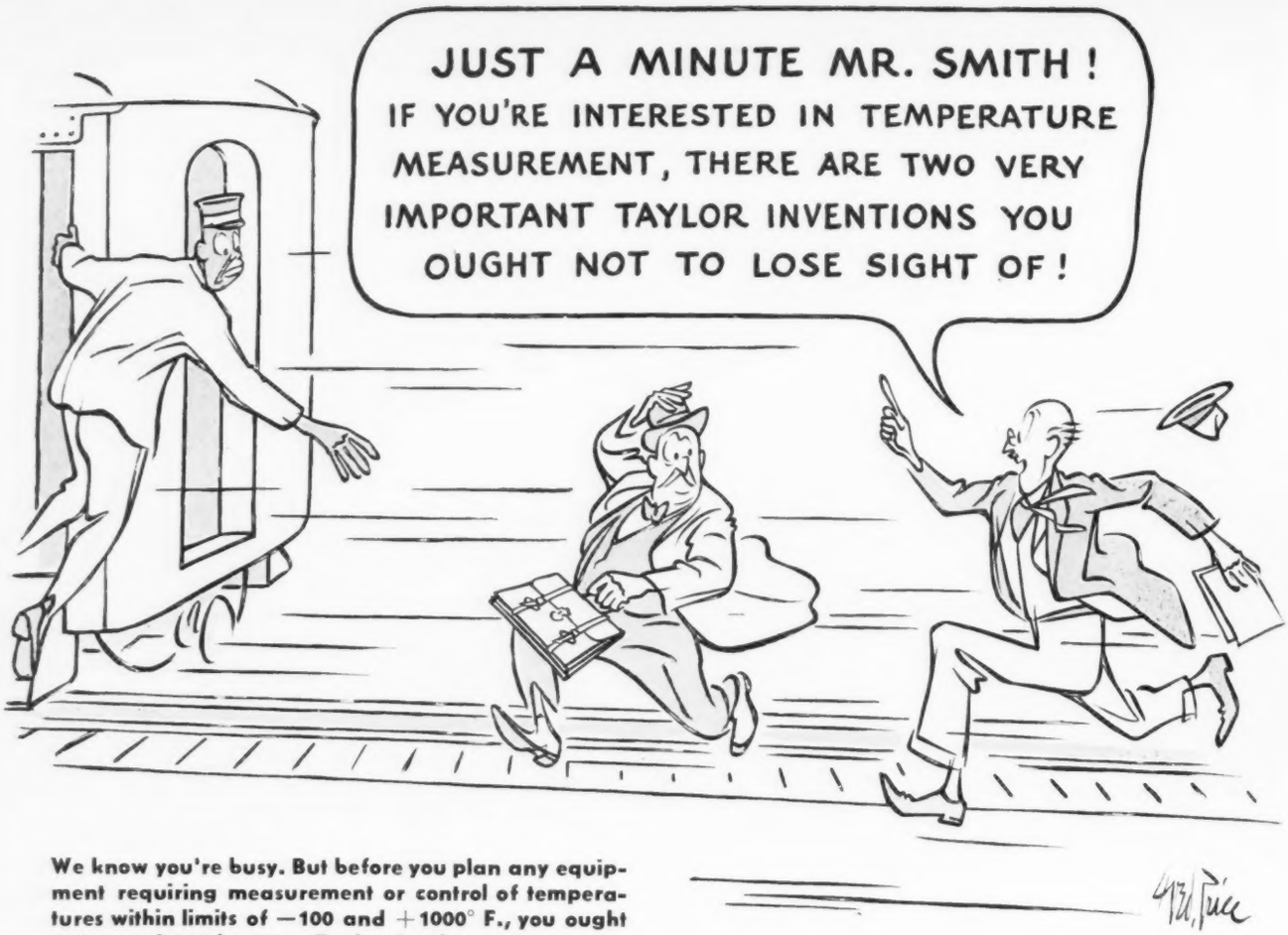
AIR CONDITIONING
REFRIGERATION


JUST A MINUTE MR. SMITH!
IF YOU'RE INTERESTED IN TEMPERATURE MEASUREMENT, THERE ARE TWO VERY IMPORTANT TAYLOR INVENTIONS YOU OUGHT NOT TO LOSE SIGHT OF!

We know you're busy. But before you plan any equipment requiring measurement or control of temperatures within limits of −100 and +1000° F., you ought to know about these two Taylor developments:

1. Mercury tubing that can't tell a lie! Imagine being able to have all the advantages of a mercury-actuated recording thermometer—on an application requiring long lengths of connecting tubing! It's long been an established fact with Taylor Accuratus Tubing. This precision-bore tubing, a Taylor invention, has a special alloy wire inside, with a coefficient of expansion so related to the tubing and the mercury that any variations in ambient temperatures along the way are counteracted on the spot. The result is *accurate* temperature recordings.

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ACCURACY FIRST
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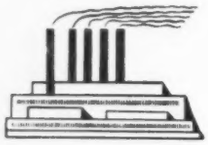

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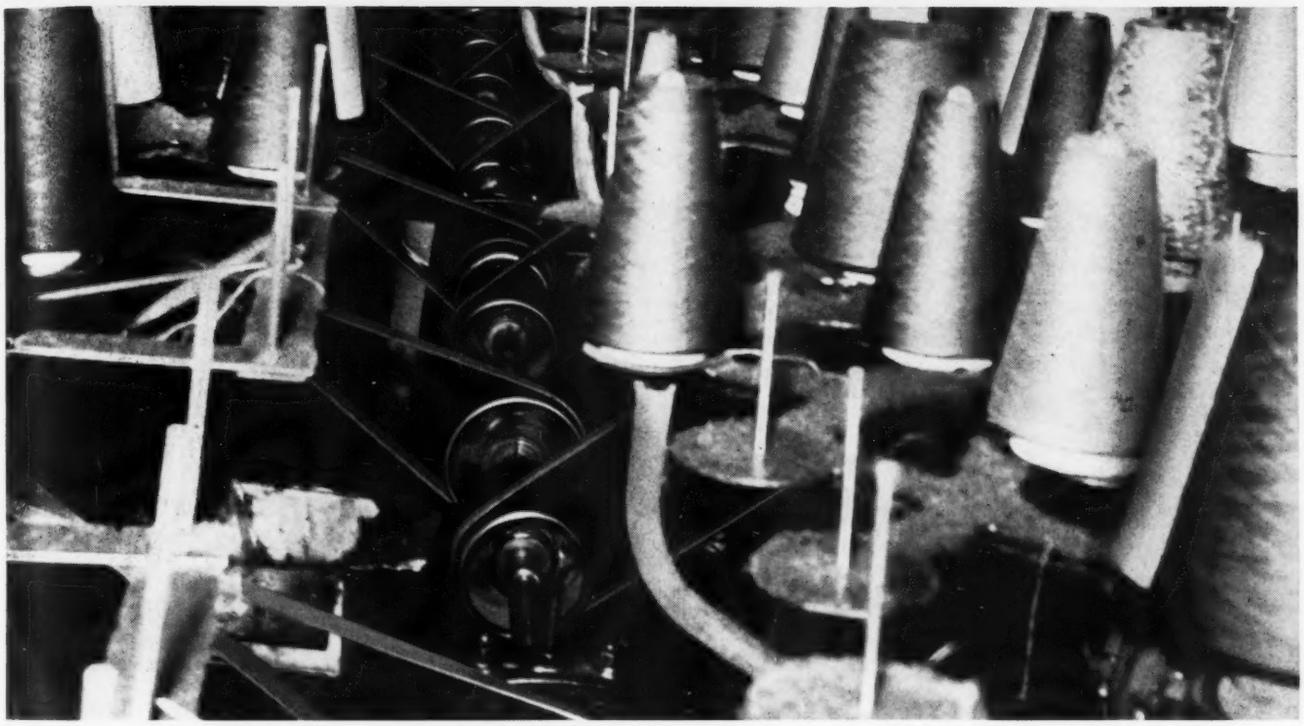
AN OUTSTANDING FEATURE of the January issue will be a group of articles dealing with the application of infra-red lamps and gas-fired radiant-heat units in drying, carbonizing, and dehydrating textiles for military and civilian purposes. Other particularly timely articles scheduled for that issue will cover gearing safety programs to meet wartime conditions, manufacture of Army overcoatings, and maintenance of opening and picking equipment. Our Washington wire will be kept busy and latest textile news from that important source will be presented. Current problems and developments will be treated in other articles.

AND IN JUNE, 1943—TEXTILE WORLD's 75TH ANNIVERSARY NUMBER

Long Service-Low Maintenance
MORE PRODUCTION
—with Tannate Leather Belting



★ Tannate has high overload capacity . . . It is stronger than most first-quality oak belting . . . It resists high temperatures (170° F. dry and 212° F. wet), water, machine oils and many chemicals . . . It keeps its firm pulley grip . . . It is pre-stretched, needs far fewer shutdowns for takeup.

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You'll see why it pays to BELT YOUR DRIVES WITH LEATHER!

TANNATE Special Textile Straps—CUT STRAP COST

You get smoother, better performance and steadier production with Tannate Special Textile Straps. "Costs down!" . . . "Production up!" . . . "Profits increased!" . . . words from mills who have learned from experience what Tannate textile straps can do for them.

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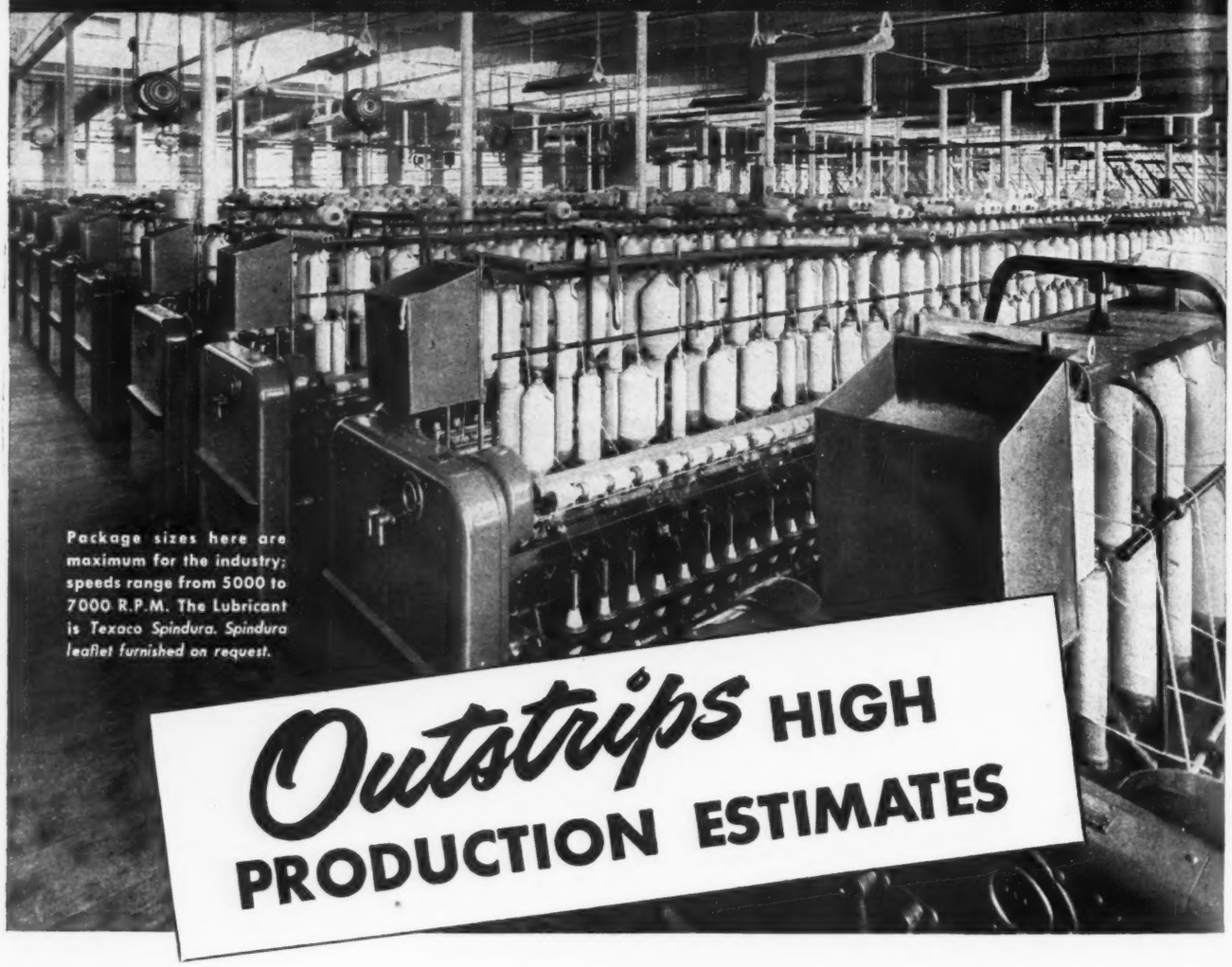
New 1942 extra-heavy package mill...



Package sizes here are maximum for the industry; speeds range from 5000 to 7000 R.P.M. The Lubricant is *Texaco Spindura. Spindura leaflet furnished on request.*

Outstrips HIGH PRODUCTION ESTIMATES

THOUSANDS of bearings in this ultra modern mill have passed through the crucial "break-in" period on into all-out production with great efficiency ... lubricated 100% with Texaco.

Operating the most modern high-speed, heavy-package machinery, Quaker Meadow Mills, Inc., Hildebran, N. C., provides a preview of postwar efficiency. Even now, yarn production outstrips the original high estimates, proving the fitness of *Texaco Spindura* and *Stazon* lubricants.

The outstanding performance that has made Texaco preferred in the fields listed in the panel has made it preferred by prominent mills in every textile area.

These Texaco users enjoy many benefits that can also be yours. A Texaco Lubrication Engineer will gladly cooperate . . . just phone the nearest of more than 2300 Texaco distributing points in the 48 States, or write:

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FOR THE TEXTILE INDUSTRY

TUNE IN FRED ALLEN EVERY SUNDAY NIGHT—CBS ★ HELP WIN THE WAR BY RETURNING EMPTY DRUMS PROMPTLY

Electronics—Secret Weapon of War

Presager of a New Scientific and Industrial Era

THE END of World War I left scientists with a new plaything. They did not know it at the time but they had their hands on a revolution. Within two years the world had radio broadcasting. Within ten years the whole art of motion pictures had been transformed as talking pictures replaced silent movies. Within twenty years television was born and people were seeing pictures in motion by radio.

The fulcrum of this revolution is the electron tube, a new tool of illimitable possibilities. One form of the electron tube is the familiar radio tube; the much publicized electric eye is another. There are many other forms, each having distinct capacities for saving time, saving energy, saving money, protecting life, limb and property.

The electron tube puts the electron to work—and the electron is the basic building-block of the universe.

Electronics is the new art, the new science of putting the electron to work. Radio and sound pictures and television are aspects of electronics; but there are many other facets of this revolution which have been brewing since the last war.

The electron tube has a typical American family tree. Edison made the basic discovery of the "Edison effect" some sixty years ago. This was followed by the invention of the "Fleming valve" and the "de Forest grid". Then Armstrong contributed his share, and hundreds of engineers in garret and cellar workshops and in the great university and industrial laboratories went to work on the tubes which employ electrons. The tube was a plaything before the last war but the world conflict brought it out of the toy stage and made it a practical, powerful tool.

Today the electron tube is guiding the destinies of the greatest armies and fleets ever engaged in the history of the world.

It is a part of the nerve center of the battleship, directing its course, finding its adversaries, broadcasting running accounts of air battles to its crews, directing gun fire and determining ocean depth.

In the air it is the means of locating and identifying enemy planes, piloting planes automatically, giving communication from plane to plane and to shore. It is even operating the controls of the plane.

In the maneuvering tank, in the officer's car, on the back of a foot soldier it transmits and receives vocal messages from every unit of the fighting forces.

Along our borders, and those of our Allies is an electronic screen which counts, follows and identifies enemy planes a hundred miles away through darkness and through fog.

In industrial plants there are electronic counters that enumerate passing articles faster than the eye can see; automatic sorters which discard defective, oversize, undersize, off-color articles; automatic cutters; devices which inspect the inside of things which the eye cannot see; controls which protect workers; controls of temperature; smoke eliminators; intruder alarms; automatic controls for whole batteries of machines.

In its October progress report on American industry, the War Production Board points out that the radio business is *five* times greater than a year ago. From 20 million dollars a month last fall, it has increased to well over 100 million dollars a month. Unfilled war orders are in excess of 4 billion dollars.

From such vast growth will emerge a new engineering of products which will immeasurably improve our peace-time living.

After the war broadcasting will be infinitely more satisfactory: radio receivers will perform with a new fidelity which will amaze us. Television reception will be as flawless as the motion picture. Present secret war developments will readily be convertible to peace-time devices that will improve our standard of living.

No longer will ships collide with other ships, with icebergs or the shore. No longer will trains collide and aircraft crash in flight.

Garage doors will open as we approach and automatically close themselves. Electric lights will automatically go on and off according to our wants and needs. Furnaces and boilers will be controlled and smokestacks will cease to belch wasteful smoke. Air will be made dust free and germ free. Food contamination will be checked, meat made tender.

Grade crossings will be made safe and auto traffic will be automatically controlled.

Medical science sees new wonders ahead. Already it is possible to see "whiskers" on germs, germs which heretofore had been but a blur when viewed through the strongest optical equipment available.

Today so much secret development is going on in the ultra-high-frequency field that little can be said of its great future. But, without divulging military secrets, it can be said that ply-wood is being dried electronically in minutes instead of hours. Ultra-high-frequency welding (not to be confused with flame welding controlled electronically) is being done dramatically and efficiently.

Ultra-high-frequency heating promises to revolutionize the baking industry—it may even heat our homes.

What is this miracle working tube that can see, hear, taste, feel and smell a thousand times more sensitively than was possible heretofore?

What is the electron? No one knows, not even the scientists who know how to employ it. Electrons cannot be seen or felt; but if 6¼ million million million electrons are pushed through a 100-watt electric lamp per second, it will light up to full brilliance. For electric current merely is a mass movement of electrons. Each electron carries its share of electricity, and since the electron has so little weight it can be moved easily and quickly. Therefore, electricity transported by electrons can be turned on or off with great ease and speed. The electron tube merely is a device that controls the flow of electricity. It is an amplifier of power which can be made to do wondrous things. The sound of a termite gnawing inside of a log can be amplified a million times . . . to a roar that can be heard over great distances.

Colors can be classified and matched to a degree not possible by any other means.

Chemical or vitamin consistency can be recognized by counting radio activity within the subject being analyzed.

There is no industry in which electronic circuits cannot be used to speed up production, to increase accuracy, to do heretofore impossible tasks of calibration and measuring.

The opportunities afforded the engineers who are developing this new "electronic age" are limitless.

* * * *

Today the electronic industry is 100% at war. It is meeting the exacting demands made upon it.

Never before was electronic equipment called upon to withstand temperatures ranging from 75 degrees below to 150 degrees above zero Fahrenheit. Never before did radios and transmitters have to withstand the shaking and abuse to which they are being subjected today.

War demands have called for much redesign, much change of materials and a new conception of operating to tolerances never dreamed of in peace-time material. As a result, electronic parts and equipment makers are building better devices.

Universities and colleges are working at top speed to produce electronic engineers, for every radio operator in a plane, every radio man in the ground forces and on ships, every man operating radar equipment or electronic control devices in ordnance . . . and there are many thousands of them . . . must be a trained technician.

The wall of military censorship is high but it is no secret that one of Britain's best weapons that keeps the Luftwaffe from exterminating London is a radio locator, a device that gives alarm of approaching planes long before they can be seen with telescopes. Scanning the horizon constantly the locator warns of the enemy's approach. In the nose of a night fighter, the locator informs pilot and gunner when the enemy is within range. Neither is it a military secret that gunfire can be controlled by electronics, and that electronics is having a big share in training our new armies.

Necessity draws a veil over the most dramatic uses of electronics in warfare, but among those who know there is nothing secret about the fact that many of today's wartime applications will revolutionize our peace-time lives. Electronics will invade every industry with totally new devices and machines. The future of the electronics industry is limited only by man's imagination.

Such is electronics, and its destiny!

President, McGraw-Hill Publishing Company, Inc.

This is the sixth of a series of editorials appearing monthly in all McGraw-Hill publications, reaching more than one and one-half million readers, and in daily newspapers in New York, Chicago and Washington, D. C. They are dedicated to the purpose of telling the part that each industry is playing in the war effort and of informing the public on the magnificent war-production accomplishments of America's industries.

TEXTILE WORLD

DOUGLAS G. WOOLF, Editor

Just One Resource Left: Research

MR. TEXTILE MANUFACTURER, suppose you could turn the clock back to 1919. Suppose you could find some sort of magic which would have saved all the textile companies that have died in the more than two decades since that date—or at least all the companies which were willing to use that magic. Suppose you could go back and utilize that magic to make textile manufacture one of the country's outstandingly successful industries—instead of staying in a rut, until war demand *temporarily* pulled it out of the rut.

Just suppose. What would you do about it? The answer is easy. You would buy a share in that magic.

But you can't turn the clock back to 1919. All you can do is to turn the clock ahead, now, so that two decades from now your company and every other company that is willing to survive by utilizing new methods, rather than being anxious to cling to old formulas at the risk of death, may have an opportunity to do so.

That opportunity is to be found in the "magic" of research. It seems like magic because it has done for other industries what has seemed impossible in our own. It is not magic because there is nothing supernatural about it. In fact, it is the best-ordered, most-predictable force we have in industry today. Every dollar spent on well-grounded research will return a sure percentage—which is more than can be said for any other expenditure in business today, with the single exception of investment in *sane* promotional activities.

MR. TEXTILE MANUFACTURER, do you know just what you have to do to make research work for you and to insure your survival over the war period, with inevitable dislocation of our economy, and to save a place for you in the post-war readjustment?

Here are the answers:

1. You must shed your conception of research as a force that is all right for the automobile manufacturer, the electrical-equipment manufacturer, the paper manufacturer—and take to your heart the realization that research is the answer for you, your company, and your industry.

2. You must grasp the fact that, in a decentralized industry such as textiles, only a relatively few firms can engage in individual efforts compatible with the need. The great majority of companies must herd together in an all-out cooperative job. And in this, they will find those relatively few big concerns on their side. The record shows that those companies have been in the vanguard of the coordinated research movement. The reason is that, in the fight of the textile industry for survival, there is and should be no intra-competition.

3. You must accept the fact that research is not a gift of the gods. It is something that you yourself must create and support and pay for—both in money and in the time of your key-men.

4. You must know that control laboratories do not represent research; they are merely a part of your operating job. To share in the results of cooperative research, you must develop an organization, relative to your size and your financial ability—whether it be one man with a microscope, or a group of men in a well-equipped laboratory. This must be your connection with the industry's program: your chance to utilize in your own mill the results of that program.

WITH THAT AS A BACKGROUND, it is big news that we have to report here. There *is* a chance for all textile manufacturers to utilize the "magic" of research. The joint program of the Textile Research Institute and the Textile Foundation is coming into full fruition. No one who attended the annual meeting of the Institute in New York last month could fail to appreciate the fullness of the new day that has dawned in textile research.

We, personally, have been in this fight for a quarter of a century. At times we have been discouraged, but we were never swayed from our belief in ultimate victory. That victory is now in sight.

And it is sorely needed. During the balance of the war, and in the post-war era, the textile revolution which started back in 1920 with the first real impetus to the synthetic-fiber industry, will reach its crescendo. All lines of demarcation between fibers will be abolished. All pre-conceived notions of our present textile equipment as "standard" will be abandoned. The technical basis of the industry will be revolutionized. This change, under way for two decades, now achieves a new tempo: the tempo of revolution.

To be a part of the post-revolution industry, you, Mr. Textile Manufacturer, and your comrade, the Machinery Manufacturer, have only one resource: research.

Douglas G. Woolf

THE EDITOR SAYS

"White Christmas"

OUR FRONT COVER this month (by courtesy of U. S. Army Signal Corps) is in the spirit of Christmas, 1942. It is a symbol of the high adventure on which our boys are now embarked: an adventure which will lead them toward the North Pole, down across the Equator, into jungles and swamps and fox-holes; miles high in the air, deep down in the sea, and on the surface of all the seas and all the lands of the earth. It is an adventure which will lead down the trail of death and injury and suffering, and to a personal grip with the most fiendish enemy in the history of men's wars. But it will also lead up the trail to glory: to the American Valhalla in which live the souls of our forefathers who carved a land of freedom out of a wilderness.

This is a Christmas with a Santa Claus sans whiskers. It is a realistic Christmas. It faces a world of struggle, of starvation, of hate. But, too, it faces a world of high purpose, in which the forces of right will prevail as surely as dawn follows the night.

Before that day dawns, there will almost assuredly be at least one more Christmas of travail, and probably two. It is the strain of these next two years that will tell the story, that will decide which side has the guts to last through the final stretch to victory. Our side has the one asset which our enemy lacks: a high purpose shared by a free people.

But the way will not be easy. This is no time for coasting, for bickering, for such petty selfishness as the attempt of a group to postpone national gas rationing. It is the time for a re-consecration to the real spirit of Christmas.

We shall win what we deserve: no more, nor less. And if we deserve more, God's help will be with us, and we shall move on into other Christmases when the spirit of good-will to men of all faiths will once more prevail throughout the world.

Stream-Lining the 40-Hr. Week Issue

WHEN WE ADVOCATED, in our first issue after Pearl Harbor, the elimination of the 40-hour week for the duration, ours was almost a lone voice. Since then, there has been a swelling chorus demanding such action. The call has come not merely from industry; it has come from the rank and file of American citizens, alert as always to the detection of stupidity. And nothing is more stupid than the perpetuation of the 40-hour week on the one hand, and the demand for an all-out effort to beat our enemies on the other hand.

The defense of the 40-hour week is centered on two theories, both of which are fallacies. The first is that this restriction has nothing to do with hours per week, but merely with rate of payment for over-time. The fallacy is apparent. Manufacturers, finding themselves pinched between rising costs and taxes, will inevitably employ three men on a 40-hr. week each, rather than two men, on a 40-hour week plus time and a half for overtime.

The second theory is that the payment of time-and-a-half for overtime acts as an "incentive" for increased production. The fallacy of that argument is also apparent on its face. If such an "incentive" is needed for the preservation of our freedom and our homes, then the idea of an all-out effort toward that end might as well be discarded now as an illusion.

It is strange that no such "incentive" is deemed necessary for soldiers and sailors who are called—and rightly so—from their homes to face danger; or for manufacturers who are ordered to stop the production of this or that—and rightly so; or for workmen whose jobs are dissolved overnight by fiat—and rightly so.

The argument against the 40-hour week limitation may be summed up as follows:

1. The 40-hour week was a mechanism born of the depression to spread the work when jobs were scarce. Today, the opposite prevails. The need of the moment is to get as much work out of every individual as is reasonably possible.

2. The added costs imposed by the time-and-a-half penalty increase the war bill (already cosmic in proportions) and help further to decrease the already slim prospect of a solvent post-war economy.

3. Companies facing untold increases in their tax burdens this year and next, and thereafter, will be *unable* to pay this penalty and remain solvent.

4. The threatened shortage of manpower, rated by experts as the most serious menace in the present conflict, is intensified by the maintenance of unrealistic work-week limitation.

5. Fighting this war with a 40-hour-week limitation, against the Axis Powers with no restrictions at all, is like fighting it with one of our arms tied behind us.

There is no sound argument for continuance of that limitation. There is every sound argument against it. Must we wait until we are defeated to prove the soundness of the judgment of the American people, now vocal in their demand that this vestige of status quo should be discarded for the duration?

We hope not.

Stark Madness

No man, woman or child—no matter how normal—has missed an occasional dream of horror. One reasonably common dream is that of being in a closed room with a maniac. That dream has come true today, on a cosmic scale. The world is locked in an almost closed room with the arch-maniac, Hitler. If you doubt it, read his letter to Petain explaining his attack upon Toulon. Every element of madness was there. It was not difficult to see, mentally, saliva drooling over fanged teeth. If you still doubt it, look at the record of starved children, mangled bodies, lost homes, devastated lands, all over Europe.

And then stop to think: This *could* happen here. Think about that. And forget your worries about an extra lump of sugar, or an extra cup of coffee, or an extra degree of heat in your living-room—or an extra gallon of gasoline. Just remember that in the countries ruled by this maniac, there are no such extras. The only extras there are an extra child's belly puffed by starvation, an extra patriot swinging idly from a rope, an extra soldier spewing his guts over a foreign soil. And remember that that child might be your baby, that patriot might be you, and that soldier might be your son—that bright-faced boy who left your home in his new uni-

form not so very many months ago.

Remembering all that, can you remember your gripes about your personal comfort? Can you forget the horror of a dream of close quarters with a maniac? Can you forget that that dream has now come true in the world—and that *you* have got to dispel it?

Mill Ends

Where It Belongs: The battle of cotton vs. rayon for tire cord will be decided, not on the floor of Congress nor in Congressional committee-rooms, nor in the heat and fire of opposing interests, but in the research laboratory where it belongs. The side that makes the better ultimate use of research will win.

Sacrifice: There is much talk—mostly oratorical—about sacrifice. But here's one for the book: There is to date no *real* sacrifice for Americans in this war except that of our boys who go out to die, and that of their parents who send them out.

How Low the World Has Sunk! When the scuttling of the French Fleet, the last reminder of France's glory, is hailed by the civilized world as a victory. And yet, how great the redemption of French freedom through that holocaust! France dies to live again—eternal.

Who's Complacent Now? Some of our soundest and most respected dollar-a-year men are joining the chorus started by high Army and Navy officers. They are raving about the complacency of the American people. When big shots can't think of anything else to say, they say that. And it's totally untrue. Americans are fighting mad—more mad than our bureaucrats. And if the latter don't look out, they'll get run over.

Shape of Things to Come: If any industrialist thinks there's big money still to be made out of this war, he should study the corporation income statements for the first three-quarters of 1942. Here's a sample: General Motors, net profit after taxes, $83,562,119 in 1942, against $161,175,834 in the same period of 1941.

Eventually, Why Not Now? Some day, somehow, there will be a pay-as-you-go tax plan. What are we waiting on? Until hundreds of thousands of American citizens are in debt to their Government? Until we get priorities on building new jails to hold these new "criminals"?

Add Old Sayings With a Meaning: "I am not afraid of tomorrow because I have seen yesterday and I love today." . . . Also, "There is this consolation: nothing can happen in the future any worse than what has already happened in the past."

Add New Sayings: "Security is the most corrosive word of modern times."

And Don't Forget: Buy War Bonds. Scrap that last obsolete machine. Go into a safety program in a big way. Get your employees lined up in the 10% War-Bond payroll purchase plan. And remember freedom is something you have to fight for.

Letters to the Editor

"Keep 'Em Running"

PHILADELPHIA, PA.

Editor, TEXTILE WORLD:

I have just read the November issue of TEXTILE WORLD, your annual mill check-up number, and want to take this opportunity to congratulate you on a very timely subject.

As I recall the matter in the past, you have frequently had articles on mill maintenance and check-up and the only thing I would like to have seen along with this would be a bibliography of past information that has been so valuable, and that has been published in the TEXTILE WORLD. Certainly with mills running twenty-four hours per day and the management finding it more difficult to keep up even their regular maintenance programs, this problem is becoming increasingly serious, and it is one that should have even better than normal attention instead of possibly sub-normal attention.

I think the articles that Bob Smith of Viscose has been writing on rayon blends on the worsted system have been exceptionally fine, and if you have any extra prints of these, I shall be glad to have a number if you can send them to us.

M. EARL HEARD, Dean,
Philadelphia Textile Institute

"So Does My Son"

LACON, ILL.

Editor, TEXTILE WORLD:

Received your letter in regard to reading TEXTILE WORLD. I read from the first page to the last one. I take in everything there is there. Have found lots of interesting things in it. So does my son, who is in the armed forces, but I send it to him. RALPH OSBORNE

"Our Secret Weapon"

NEW YORK

Editor, TEXTILE WORLD:

Again congratulations! This time, on your very human editorial—"Our Secret Weapon" in the November issue.

SNELSON CHESNEY, Vice-president,
John P. Maguire & Co., Inc.

"Fabrics for Civilian Use"

GRANDBY, QUE.

Editor, TEXTILE WORLD:

We are very interested in your articles on synthetic fabrics for civilian use.

We are particularly interested in the following six cloths, herringbone, gabardine, cavalry twill, twill, worsted system suiting, and slub, as illustrated on these pages, and should be greatly obliged if you could supply us with more complete particulars of construction, giving the counts of yarn, together with finished width and weight.

If at the same time you could suggest possible suppliers of these yarns, and perhaps furnish small samples of these cloths, these could be of great use to us.

F. H. BROOK, Director,
The Montrose Worsted Mills, Inc.

"Fabrics for Military Purposes"

PHILADELPHIA, PA.

Editor, TEXTILE WORLD:

We are interested in a series of articles you are featuring in TEXTILE WORLD. The subject of this series is "Fabrics For Military Purposes."

Since the material contained in this series is of value to us, we would like to have the complete set of all issues to date. You may have the series in bound form, and if so, please furnish me with a price for the set. If not, please advise if you could supply me with all issues on individual sheets.

E. B. BERRY, Technician,
La France Industries

"Not Labor's to Demand"

CHARLOTTE, N. C.

Editor, TEXTILE WORLD:

We have read your editorial "Not Labor's to Demand" and think it excellent.

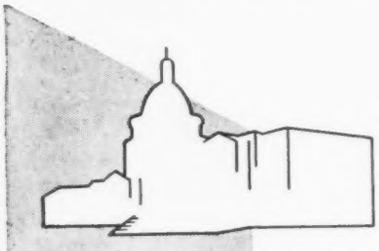
I have talked with Mr. Cone and he thinks it would be a good idea to send this out to our Southern members in Congress and also to the press, provided you have not send it out.

We will need about 1000 copies. Please have these made as soon as possible and sent to us, together with bill.

W. M. MCLAURINE,
Secretary and Treasurer,
American Cotton
Manufacturers Association

What CMP Means to Textile Men

No important direct effect on the mills —Manpower is current Problem No. 1



McGRAW-HILL WASHINGTON BUREAU

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Blaine Stubblefield — Robert Colborn
Carter Field — Irvin Foos — M. G Maury
Dorsey Adams — George E Doying, Jr
J. C. Stark — Richard K LaBan
Malcolm Hobbs — Hunter Snead
E. H Martin — Malcolm Burton

By BLAINE STUBBLEFIELD

BIGGEST IMMEDIATE PROBLEM of the textile industry, as viewed from Washington, is manpower, and it is a difficult one. Not so difficult, and still comfortably distant in the future, is the job of adjusting to the new Controlled Materials Plan, which is being formed now as the eventual principal framework of the War Production Board.

So far as one can see now, the textile manufacturing industry will not be directly affected by the new Controlled Materials Plan.

The textile machinery industry, however, will get its materials under CMP procedure when the plan goes into effect next year. July 1, 1943, is the effective date, but the initial, shakedown period will start April 1, the beginning of the second quarter. The spade work is being done right now, and industries which will come under CMP's initial control are making their preparations for compliance.

Textile machinery and parts producers in their dealings with Washington will find no great change as CMP gradually replaces the Production Requirements Plan. They will deal directly with their old industry division, the Textile Machinery Branch of WPB, headed by Robert S. Dempsey. They will get their supplies of metal by allotment from CMP, through the Office of Civilian Supply, to the Textile Machinery Branch of WPB. OCS is the "claimant agency" for textile and similar industries.

But the distribution of the *output* of textile machines and parts and maintenance supplies will be the same as ever. In other words, machines will be distributed as usual on priorities granted on application form PD-1-a, and maintenance and repair parts will be distributed under the existing Production Requirements Plan. Textile mill maintenance order P-53 was allowed to expire when most producers came under PRP.

PRP is to be superceded by CMP, in steps. Initially, CMP will control only three materials: steel, copper and aluminum. Other materials will be added from time to time, probably not until after July, when the trial period is ended. Of course none of the materials in prospect for control has been named as yet. Materials not under CMP will continue under WPB materials orders, or under PRP, some remnants of which will remain in effect for some time to come.

CMP is still in such a nebulous state that any detailed description of its workings would be premature. It is on its way to becoming the principal framework of WPB operations. Broad effects of this major change in war production administration will be two: it gives WPB Vice-Chairman Ferdinand Eberstadt unquestioned authority over the work of Ernest Kanzler, Director General for Operations; and it strengthens the position of the industry branches. In the new setup the branches, such as the Textile Machinery Branch, will be called Divisions.

Attached to the office of Program Vice-Chairman Eberstadt is the Requirements Committee. This committee, made up of representatives of all the major war agencies, makes the final decisions on allocation of materials. Two staff units, the Program Bureau and the Facilities Bureau collect and prepare data and make preliminary decisions for the Requirements Committee.

In general, CMP is a program to balance the supply of materials for war and essential civilian uses when needed. Heretofore, pressure from all directions has forced war production agencies to give priorities on, and allocate, more materials than were available.

CMP will allot available materials to "claimant agencies"—that is, War and Navy Departments, Maritime Commission, Aircraft Scheduling Unit (new "Little WPB" to push airplane output) Lend-Lease, Board of Economic Warfare, and the Office of Civilian Supply, which as already stated, is the claimant agency for textile machinery and similar production.

These agencies, in turn, will subdivide their allotments to prime contractors, who will then subdivide to subcontractors. The result will be that each manufacturer receiving a war contract, as well as his subcontractors, will get allotments of materials as needed.

After July 1, mills producing steel, copper and aluminum must fill all orders through allotments under CMP. For three months prior to that date, preference ratings will take care of manufacturers who do not receive their CMP allotments on time. However, it should be noted that allotments for a given month will be filled ahead of orders bearing preference ratings. Distribution of all materials, other than CMP-controlled materials, will be governed by preference ratings.

While plans are not yet announced, it is assumed there will be an over-all industry maintenance department of CMP. If so, it will make little difference to textile and other industries at the production end; they will deal with their industry divisions, and pay small attention to the overhead machinery.

Turning to present problems, there has been confusion lately about the allowance of metals by PRP for production of maintenance parts and supplies. WPB officials say they fully understand and sympathize with the anxieties of the industry. The allowances for the present quarter were late, but sufficient quotas were finally authorized. Officials declined to discuss reasons why the supply was late, but the writer ascertained that the interests of the textile and textile machinery industries were conscientiously looked after by the WPB Textile Machinery Branch.

What appears to be a new maintenance aid to all war productive facilities is the authorization of a top

PHILADELPHIA QM GETS "E" AWARD: At left is speakers' platform during the presentation ceremonies on Nov. 27 at the Depot. Below are a few of the ranking officers who took part—(left to right) Col. Thomas W. Jones, Director of Procurement, Philadelphia QM Depot; Maj. Gen. Milton A. Reckord, Commanding General, Third Service Command; Col. Robert C. Brady, Commanding Officer, Philadelphia QM Depot; Maj. Gen. Edmund B. Gregory, The Quartermaster General, U.S.A. General Gregory presented the award, and it was accepted by Colonel Brady. Among the textile men on the platform were Roy A. Cheney, of Underwear Institute; Col. C. F. H. Johnson of Botany Worsted Mills; and M. Earl Heard of Philadelphia Textile Institute. (Photos by Photo Section, Phila. QM Depot)

priority rating of AA-1, next to the highest, for essential repair and maintenance of plants, including textile plants, during the first quarter of 1943. This applies to both war and essential civilian contracts. But for the present it is merely a statement of policy of the committee, and any orders effectuating the policy will be issued before the first of the year.

Textile mill parts requirements are increasing because many of the plants are running three shifts without sufficient cooling-off periods, and because more inexperienced employees are operating the machines. There are more "wearing-out" machines in service than usual, since few new replacements are available, but in general textile mill equipment is in good shape.

The Textile Machinery Branch made every effort during the last 18 months, and especially during the period that textile machinery producers were being converted to ordnance, to put the nations' textile mill plant in good running order for the duration. Executives of the Branch say they are pretty well pleased with their results.

AND NOW, ABOUT MANPOWER: Important measures to remedy the manpower shortage were in the making, but were not crystalized, at this writing. Essentially, the manpower controversy was an argument—between the military services and the home production force. Each has a job to do; each wants capable help. The military have the best of the argument by virtue of their undeniable need for able-bodied males. But if Army and Navy take too many, the supporting population fails to deliver. It was the kind of contest that could be resolved nowhere except in Congress or the White House. Telling people when and where to work and for how much is unconstitutional (in peace time), and for another, it makes you unpopular. The President didn't want to run with such a muddy ball, but he knew Congress would fumble, so he took it. He announced that he would do the job on executive authority, without legislation.

His letter to the Army and Navy, telling them not to commission or enlist any Government workers or any munitions workers on essential jobs, does not directly affect the textile industry. What the President's program might do by way of freezing workers on their jobs, or registering women, or ordering all jobs cleared through the U. S. Employment Service — things that would affect textiles, could not be predicted.

The President's problem seemed to be roughly the choice between two schemes already worked out:

1. Selective Service Replacement Plan would take control from McNutt. The proposal suggested that employers submit employee replacement schedules to the State Director of Selective Service. This would entail taking an employer's word concerning each employee's essentiality. In other words, the employer would offer his replaceable men to the Services. It would bring quicker results than the so-called "manning tables" of War Manpower which require a large staff of technical workers.

2. The "manning tables," to be prepared by employers, would be designed to show the job classification of each employee and his relative importance to his company. (See page 70.) Also the data would indicate the amount of time required to train his replacement. The Government manpower authority could then gage how deeply it could afford to cut into any plant personnel.

The textile industry's need for action is sharply drawn in the statement of Dr. C. T. Murchison, head of the Cotton-Textile Institute:

"Cotton mills probably have reached the peak of their capacity to turn out additional yardage. In 1939, cotton mills, exclusive of dyeing and finishing, employed 409,000 workers and had 6,200 separations per month. In the first six months of this year, employing more than 500,000 workers, there were 37,000 separations per month, approaching 100% turnover per year."

Government officials told TEXTILE WORLD, however, that these figures include the goings and comings of the same employees, and that the actual turnover is not nearly so great as it looks, but that it is serious.

MOST RECENT MEDICINE for relief of this ailment is an occupational bulletin issued by the Selective Service System

certifying 22 textile occupations as essential to support of the war. This means that local draft boards are now free to grant deferment to workers in these occupations. The bulletin covers spinning and weaving of silk and Nylon for parachutes and powder bags; canvas for tents, sails, etc.; cotton, woolen, linen and knit goods for military uses.

The order is Occupational Bulletin No. 39, dated Nov. 7, and signed by Lewis B. Hershey, director of selective service. It lists the 22 occupations and reads as follows:

"1. The War Manpower Commission has certified that the production of textiles is an activity essential to the support of the war effort.

"2. This bulletin covers the following essential activities as listed in the amendment to Local Board of Release No. 115: (a) *Production of textiles:* Spinning and weaving of silk and Nylon for parachutes and powder bags; of canvas for tents, sails, tarpaulins, and other related heavy canvas products; cotton, woolen, linen and knit goods for military use.

"3. The following list of occupations in the production of textiles are occupations requiring a reasonable degree of training, qualifications, or skill to perform the duties involved. It is the purpose of this list to set forth the important occupations in the production of textiles which must be filled by persons capable of performing the duties involved, in order that the activity may maintain efficient production. This list is confined to those occupations which require six months or more of training and preparation.

"4. In classifying registrants employed in these activities consideration should be given to the following: (a) The training, qualification, or skill required for the proper discharge of the duties involved in his occupation; (b) the training, qualification or skill of the registrant to engage in his occupation; and (c) the availability of persons with his qualifications of skill, or who can be trained to his qualification, to replace the registrant and the time in which such replacement can be made."

The critical occupations in the production of textiles are as follows:

Accountant, Cost
Beamer Tender
Card Grinder
Card Tender
Chemist
Cloth Tester
Comber Fixer
Cotton Classer
Drawer-In
Dresser Tender
Dyer
Engineer, Professional and Technical
Foreman (This title covers foremen who are engaged in supervisory duties in connection with the production of textiles, and who exercise independent judgment and assume extensive responsibility for the product. It does not include straw bosses or laboring gang foremen.)
Loom Fixer
Manager, Employment and Personnel
Mechanic, Maintenance
Mill Superintendent
Spinner, Frame
Spinner, Mule
Weaver, (All Around)
Weaving Inspector
Wool Sorter

Another move toward alleviation of manpower shortage is Manpower Commissioner Paul McNutt's program to train millions of workers with all speed, and to fine-comb every city and village for already-skilled workers. This will bring some immediate relief to munitions. How much it will help textiles is a question.

OF IMMEDIATE HELP is Secretary of Labor Francis Perkins' order lowering the minimum age for women employed in war industries from 18 to 16 years. No girl under 18 may be employed for more than eight hours in any one day, or between the hours of 10 p. m. and 6 a. m. This order should be read in detail. It follows in part:

"I HEREBY AMEND the order dated April 21, 1942, pursuant to powers vested in me by Section 6 of the Walsh-Healey Public Contracts Act until further ordered granting an exemption from the application of Section 1(d) and Section 2 of the Act with respect to the employment of girls between the ages of 16 and 18 by contractors from this date in any industry, subject to the following conditions:

"1. That no girl under 16 years of age shall be employed.

"2. That no girl under 18 years of age shall be employed for more than 8 hours in any one day, or between the hours of 10 p. m. and 6 a. m. or in any way contrary to State laws governing hours of work.

"3. That no girl under 18 years of age shall be employed in any operation or occupation which, under the Fair Labor Standards Act or under any State law or administrative ruling, is determined to be hazardous in nature or dangerous to health.

"4. That for every girl, under the age of 18 years employed by him the contractor shall obtain and keep on file a certificate of age showing that the girl is at least 16 years of age.

"5. That a specific and definite lunch period of at least 30 minutes be regularly granted any women workers under 18 years of age.

"6. That no girls under 18 shall be employed at less than the minimum hourly rate set by or under the Fair Labor Standards Act or by the Walsh-Healey Public Contracts Act for the industry in which the exemption is granted."

Revision of the wage-hour law to permit more than 40 hours work at straight pay is unlikely right now. The new Congress convening after new-year might try it, depending on whether its acquired Republicans decide to fight labor or court its favor.

Other News From Washington

150,000 tons of hemp for 1943, to be used for manufacture into cordage for military and essential civilian purposes, is the goal of the Commodity Credit Corp. production and processing program. The Defense Plant Corp. will finance the construction of 71 hemp mills in 1943 to be operated by CCC. WPB has assigned preference ratings for necessary construction materials and harvesting machinery. Each plant will be located to service approximately 4,000 acres of hemp in a number of states.

Army uniform allowance legislation is pending in both the House and Senate which seeks to increase the amount from $150 to $250 and to extend the allowance to National Guard officers, warrant officers and other groups not now covered by the bill. The Budget Bureau has approved the extension of the uniform allowance to National Guard and warrant officers, but opposes the $100 increase.

Old silk and Nylon hose have now become a war salvage item. After the silk fiber has been reclaimed, it will be woven into powder bags to carry the explosive charges in big-caliber guns of the Army and Navy. Silk burns completely which makes it unnecessary to clean the gun breach before loading. Reclaimed Nylon also has important military uses. There was a pre-war story that the Army had a mountain of discarded stockings. If so, it wasn't enough.

Addenda to Textile War Manual

PRICE CEILINGS AND AMENDMENTS BY OPA

Nylon Hosiery—It is illegal to sell or offer to sell women's hosiery made from "spun" Nylon, Nylon "blend" or Nylon "combination" yarn until OPA has established specific prices for such hosiery, OPA stated Nov. 5 in response to reports that these types of stockings are being sold in some instances. Ceiling prices for additional types of women's Nylon hosiery, other than the standard constructions for which dollar and cents prices were set in the recent Nylon hosiery regulation, were announced Nov. 17 by OPA. These prices are for Nylon stockings that recently have appeared on the market although they are not made of filament Nylon yarn. Types covered by the action are Nylon hosiery made of "combination," "spun" or "blended" Nylon yarns. Retailers, wholesalers and manufacturers will be enabled to sell these types of stockings without the necessity of making individual applications for specific prices which would have been necessary under the original regulation. Maximum prices for these stockings are determined by the highest price charged during March, 1942, by the seller, or, if he made no sale, the highest March price charged by his most closely competitive seller, but not to exceed dollar and cents prices set forth in price tables covering retail, wholesale and manufacturing levels.

Outerwear Garments — Pricing methods for 1943 spring and summer styles of women's, girls', and children's outerwear garments are provided through a new OPA regulation to follow the present MPR No. 153, which expired Nov. 30, OPA announced Oct. 30. Manufacturers' ceiling prices for a group of "fall and winter outer clothing" are established at levels at which they opened their lines during the period Dec. 1, 1941 to March 31, 1942, regardless of subsequent price increases, OPA announced Nov. 6. Action is taken through Amendment No. 49 to Supplementary Regulation 14 to the GMPR.

Wool Waste—A substantial revision of the dollars-and-cents price tables covering several hundred types of wool waste materials—of importance in the making of re-worked wool, is announced Nov. 12 by OPA. One significant result will be to promote the sorting of mixed lots of rags or clips, recovered from men's and women's clothing and other articles, into groups of natural shades and colors. Ceiling prices for wool waste materials will generally remain at the levels prevailing from Oct. 1 to Oct. 15, 1941, as originally established by MPR No. 123 (Raw and Processed Wool Waste Materials). Amendment No. 3 reclassifies the materials into more appropriate relations with one another, adds new classifications so that virtually all types of wool waste materials are now covered, and corrects omissions and inaccuracies found in the multiplicity of items contained in the tables. The maximum prices which a clothing manufacturer may charge for new clips are listed in two price tables of the regulation covering new wool clips and knitted wool clips. For clips not enumerated in these two tables which are sold by a clothing manufacturer, ceilings must be determined in accordance with the "in line with" provisions of the regulation.

Underwear—Additional types and an increased number of sellers of fall and winter knitted underwear are brought under the provisions of Amendment 1 to MPR 221 and Amendment No. 7 to Regulation 210, effective Nov. 23, the provisions of which set ceiling prices on these garments at all sales levels. Retail price reductions in knitted underwear of from 3 to 20¢ per garment are expected to result from action taken Nov. 20 by OPA requiring that savings in material costs of these garments due to the necessary wartime substitution of less expensive carded yarn for combed yarn be passed on to the consumer. A new maximum price regulation, No. 273, (Articles of Apparel in Which Materials Have Been Replaced) effective Nov. 25, sets price ceilings at the manufacturing level for all knitted underwear in which combed yarn has been replaced by carded yarn and in which no other change has been made. Manufacturers must deduct from established maxima for combed yarn garments specific sums for the same garments of carded yarn.

PRIORITIES AND ALLOCATIONS—AMENDMENTS BY WPB

Long-Staple Cotton—Samples of imported long-staple cotton can be taken out of bond without authorization of WPB, the Director General for Operations announced Oct. 27. Under Order M-236, authorization on PD-664 is required for removal of imported long-staple from customs. Amendment No. 1 to the order changes the definition of imported long-staple to exclude representative samples of the cotton taken under a permit issued by the U. S. Bureau of Customs.

Manila Cordage—Use of manila cordage for life-boat falls on ocean, coastal, and Great Lakes' ships of 1000 tons or over was permitted Oct. 25 by WPB. In an amendment to Order M-36, the restrictions limit the use of these grades to the manufacture of cordage through blending with other grades of Manila fiber. The amendment cuts off their use in non-essential products such as bagging.

Combed Cotton Yarn—Effective date of provisions covering production of medium and coarse combed yarn was postponed to Jan. 1, 1943, by WPB. The provisions of the order (M-155, Combed Cotton Yarn) have been scheduled to become operative on Nov. 2. The restrictions provide that 40% of medium combed yarn production and 65% of coarse combed yarn be held in reserve.

Outing Flannel—Amendment No. 2 to Order L-99 requires that half the looms making outing flannels which had been converted to production of bag sheetings on April 20 now be reconverted to turning out flannel material. Production of the remainder of these looms is not affected by the amendment. Looms which had been authorized to produce outing flannel, under appeals from provisions of L-99, must continue to turn out flannel upon expiration of their authorizations. If they are not producing outing flannels, under terms of their appeal, they must convert to this product within 60 days after expiration of the authorization.

Textile Research Now on Offensive

13th annual meeting of Textile Research Institute is turning point in campaign

JUST AS WINSTON CHURCHILL said that the United Nations offensive in North Africa was not the beginning of the end, but the end of the beginning, so did the 13th annual meeting of the Textile Research Institute in New York, Friday the 13th of November, mark the end of the beginning: the end of the defensive program in textile research. Every aspect of that meeting indicated that no longer do the proponents of research in textiles have to apologize for their enthusiasm, but that, on the contrary, the industry itself is now in the mood to carry the campaign into the offensive stage.

This fact was dramatized by the hitherto unheard of attendance of 350 at the luncheon, by the announcement that the company members in the Institute had increased by nearly 100%; by the revelation that the Institute and the Textile Foundation were in the forefront of textile research on vital problems affecting the war effort; and by the presence of Army officers at both the luncheon and the off-the-record technical discussion in the afternoon.

The scope of the Institute's activities was further revealed by the reports of the president, Fessenden S. Blanchard; of the chairman of the Technical Research Committee, William D. Appel; of the chairman of the Economic Research Committee; Stanley B. Hunt; and of the chairman of the Publications and Publicity Committee, Douglas G. Woolf.

It was further dramatized by the election of a group of outstanding textile men as additional directors of the Institute, including C. F. Broughton, president, Wamsutta Mills; M. Earl Heard, dean, Philadelphia Textile Institute; Marland C. Hobbs, vice-president, Arlington Mills; Charles J. Huber, vice-president, U. S. Testing Co.; J. Spencer Love, president, Burlington Mills; Albert L. Scott, president, Lockwood Greene Engineers; and Charles W. Sweet, vice-president, Wellington Sears Co.

The other directors of the Institute include: W. D. Appel, National Bureau of Standards; John Bancroft, Jr., president, Joseph Bancroft & Sons Co.; Arthur Besse, president, National Association of Wool Manufacturers; Fessenden S. Blanchard, president, Textile Research Institute, Inc.; F. Bonnet, American Viscose Corp.; Fuller E. Callaway, Jr., president, Callaway Mills; H. M. Chase, Riverside & Dan River Cotton Mills, Inc.; Earl Constantine, president, National Association of Hosiery Manufacturers; Erb N. Ditton, Gotham Hosiery Co., Inc.; Alban Eavenson, Eavenson & Levering Co.; Russell T. Fisher, president, National Association of Cotton Manufacturers; Ephraim Freedman, R. H. Macy & Co., Inc.; H. Grandage, vice-president, Clark Thread Co.; W. M. McLaurine, secretary, American Cotton Manufacturers Association; Louis A. Olney, Lowell Textile Institute; Edward T. Pickard, Textile Foundation; D. H. Powers, Rohm & Haas Co., Inc.; Robert E. Rose, E. I. du Pont de Nemours & Co., Inc.; Edward R. Schwarz, Massachusetts Institute of Technology; Harold DeWitt Smith, treasurer, A. M. Tenney Associates, Inc.; A. M. Tenney, president, A. M. Tenney Associates, Inc.; Albert C. Walker, Bell Telephone Laboratories; and Douglas G. Woolf, editor, TEXTILE WORLD.

Dr. C. E. K. Mees (left), guest speaker at luncheon, and Fessenden S. Blanchard, Institute president.

At the annual meeting held before the luncheon, the following officers were reelected: Fessenden S. Blanchard, president and executive secretary; Fuller E. Callaway, Jr., Dr. Harold DeWitt Smith, and Dr. Robert E. Rose, vice-presidents; and Edward T. Pickard, treasurer. The executive committee of the Institute is composed of these officers and the chairmen of the standing committees: William D. Appel, Stanley B. Hunt, and Douglas G. Woolf.

Heart-warming phases of the meeting included a few words of greeting from Franklin W. Hobbs, chairman of the Textile Foundation; and the presentation of a gift to Mr. Pickard from his friends in the Institute.

PRESIDENT BLANCHARD'S REPORT highlighted the progress of the Institute during the last year. He said, in part:

"The last year has been a year of organization development and of adjustment to the war program. A year ago our New York organization consisted of two people, with editorship of our revised publication *Textile Research* being ably handled on part time by Winn Chase—thanks to the generosity of Doug Woolf and TEXTILE WORLD. We now have four in our New York office, including our new full-time editor, Julian Jacobs, who started his work on May 1. We plan to add to our personnel a new man to assist us in the organization and supervision of cooperative research and mill contacts, who will have his headquarters here.

Douglas G. Woolf (left), chairman of publications and publicity committee; and Fuller E. Callaway, Jr., vice-president of Institute.

Lt. Col. Bestor Robinson, QMC (left), and Franklin W. Hobbs, chairman of the Textile Foundation since its establishment in 1930.

"In addition to our own full time staff, I must add the very important fact that, under the new arrangement with the Textile Foundation, the services of Dr. Milton Harris, with his group of research associates and their very complete laboratory facilities at the National Bureau of Standards, have been made available to us. Dr. Harris is now our Director of Research as well as Director of Research for the Textile Foundation. We owe a great deal of thanks both to the Textile Foundation and to the Bureau of Standards, not only for their far-sighted attitude that made this possible, but for the splendid cooperative spirit which is making this plan function successfully.

"Thus we shall have working full time for the war program and in the interests of our members not only the five people handling the administrative and cooperative research work, and editing the magazine, but also Dr. Harris, a scientist with a record of achievement in textile research, and his able staff of chemists and physicists.

"After a year's experience of our publication *Textile Research*, with its new format and policy, a questionnaire was sent out to our members by Douglas Woolf, chairman of our Publications Committee, asking for frank expressions of opinion on the magazine and on our publications policies. You have already had the results of this questionnaire from Mr. Woolf and of his recommendations for a future policy which will we hope preserve the best features of the old and new magazines and add what is most needed. The transition to an improved magazine will necessarily be gradual, but we hope will be well started by the first of the year.

"It is difficult to list in detail the many ways in which we are assisting in the textile research war program, partly because some of the most important work we are doing must remain confidential, and partly because Dr. Milton Harris has kept no record of the literally hundreds of conferences and telephone calls he and his associates have had with officers from various branches of the armed services—Quartermaster, Air Corps, Engineers' Board, Navy, etc.—as well as from members of the industry. However, here are a few of the jobs on which we have been working—and when I say 'we' I refer to the Textile Research Institute and the Textile Foundation who, while maintaining their separate organization identities, are uniting their efforts on the war program.

"(1) The Conservation of Wool:—Dr. Harris is Chairman of the Wool Conservation Committee of three set up by the Quartermaster. A panel on blankets has been organized, including qualified and representative members of the industry, to work on possibilities for conservation of wool and the substitution of other fibers in meeting military needs. I am personally familiar with the importance of wool conservation, on which I did considerable work while consultant on textile conservation for the War Production Board.

"(2) Substitution of cotton rope for manila and sisal:—Dr. Harris is a member of a committee set up to deal with this subject.

"(3) Possibilities for utilization of high strength cotton yarns in order to obtain lighter weight military equipment without loss in serviceability. We are aiding on this problem.

"(4) Committee on Aviation Clothing:—We are working with this Committee (of which Dr. Harris is a member), which is a sub-committee (under Dr. Newburgh) of the Committee on Aviation Medicine under Dr. DuBois. At high altitudes the temperature frequently goes to 40 or 50 degrees below zero, making the problem of maintaining life and efficiency at such altitudes one of our most serious challenges. We are now actively at work on this problem in cooperation with the Committee. It involves questions of heat loss and its prevention which for

K. J. A. Helder (left), director of Peake & Co., British clothiers, who was visiting in this country, and Edward T. Pickard, treasurer of the Institute and secretary of the Foundation.

(Left to right) Donald Comer; Lt. Col. Frank M. Steadman, QMC; Dr. Harold De Witt Smith and Dr. Robert E. Rose, both vice-presidents of the Institute.

obvious military reasons we cannot discuss here.

"(5) Accelerated ageing of military fabrics:—We are working on the problem of speeding up the tests which measure water and weather resistance and other qualities needed for military fabrics, such as duck, burlap, etc. While field tests may be the most reliable indication, it is important to get sufficiently dependable indicated results much more quickly through laboratory techniques.

"(6) Resistance of fabrics to ultraviolet light:—We are cooperating on this matter.

"(7) Textile Research Planning Committee:—Dr. Harris is a member of this committee of four set up by the Quartermaster, under the chairmanship of Major S. J. Kennedy, who is in charge of the textile section in the Quartermaster's Research and Development Branch.

"(8) Synthetic Textiles Sub-Committee of the Office of the Quartermaster General:—This Committee has been set up under the chairmanship of Dr. Harold Smith of A. M. Tenney Associates, our vice-president, to act as a clearing house on rayon problems. We are cooperating with this committee and the Office of Quartermaster has expressed a wish that its work be tied in closely with ours.

"(9) Special Supplements to our magazine *Textile Research* on military finishing requirements are being brought out as already described.

"(10) Warp sizing of spun rayons, already referred to, is being conducted under Dr. Harris' supervision partly at North Carolina State College Textile School and partly in our laboratories in Washington. It has been indicated that at least one third of loom stoppages are due to improper sizing —thus indicating the importance of this study to loom efficiency."

IT WAS FORTUNATE that the principal speaker at the luncheon was Dr. C. E. K. Mees, vice-president and research director of the Eastman Kodak Co., for his remarks were exactly attuned to the spirit of an industry which is just now emerging from a backward to a forward place in industrial research.

Tracing briefly the vital wartime research now taking place in such basic fields as food, transportation, clothing and housing, Dr. Mees said that too often those in financial control since the depression were forced by the desire to protect investments to adopt conservative policies on new inventions and methods. He referred to the record expansion of the German chemical industry in the last decade when self-sufficiency became the keynote of Germany's pre-war industrial development program.

A vital factor in that program, he declared, was the "revolutionary" emergence of scientific research from cloistered shelters of universities into the front ranks of industry planning and output.

"Scientific research is beginning to affect production and distribution of food to a much greater extent than has at present occurred in the housing industry," Dr. Mees declared. "The preservation of food products has completely changed our menus, and methods of preservation are improving every day. New frozen foods, prepared under conditions of rigid scientific control, are making new products available for our tables, and even more radical changes such as those suggested by methods of dehydration are being tried experimentally.

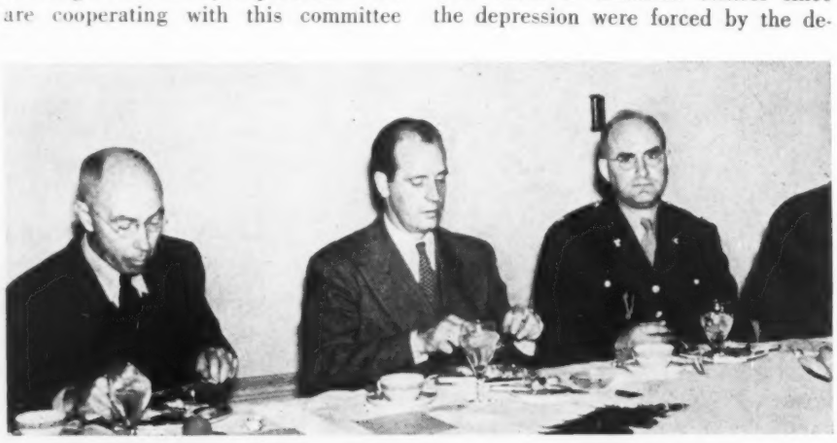
"When we turn to clothing," he continued, "we find the advance of science is making very great changes in the textile industry, but that those changes have so far come not so much from the industry itself as from progress of the chemical industry, which has developed the synthetic fibers."

"The cellulose fibers, viscose and acetate rayon," Dr. Mees added, "are completely established. Today they can not only supplant cotton and silk but can even take the place of wool. Even more radical fibers are now being made, derived from various synthetic resins, and as chemistry progresses many high molecular chemicals will be found which can not merely replace the natural fibers but supply new materials with properties previously unknown."

Disclaiming knowledge of what directions will be taken by the textile industry in the further pursuit of scientific research, Dr. Mees added:

"In view of the financial organization of the textile industry, I imagine that in the past there has been a certain amount of conservatism arising from the financial end and that your operating men are more eager to see your industry take its place in the great march of progress than those whose interests are entirely financial. You can be assured that your wishes will be granted.

"Eventually, the textile industry will do as much scientific work and will gain as much from the application of science as any industry in existence and will very rapidly make up for any lag that may have occurred."



(Left to right) W. D. Appel, chairman of technical research committee; Stanley B. Hunt, chairman of economic research committee; Maj. Stephen J. Kennedy, QMC.

Walsh-Healey Act Covers Most Mills

Sets labor standards on government contracts; administered with Wage-Hour

By WILLIAM B. SMITH

Information Branch, Wage-Hour Division, U. S. Dept. of Labor, New York

IMMENSE PURCHASES of textiles by Uncle Sam for the armed forces have resulted in marked increase in the number of firms that are subject to the Walsh-Healey Public Contracts Act. This law, which generally applies to Government contracts for supplies and materials in excess of $10,000, sets standards of minimum wages, maximum hours, child labor, convict labor, and safety and health.

The minimum wages required under the Act are those which the Secretary of Labor has determined for specific industries. So far, minimum wage determinations ranging from 30 to 70¢ an hour have been issued for about 55 industries. All such determinations become effective on the dates specified therein, and do not apply retroactively.

From Dec. 17, 1941, until June 24, 1942, the minimum wage determination in the textile industry was 37½¢ an hour. Since June 24, 1942, the minimum rate has been 40¢ an hour for textile firms operating under the Public Contracts Act. The employment of learners, handicapped workers, and apprentices at subminimum wages (not less than 25¢ an hour) is permitted in accordance with the present regulations covering such employment under the Fair Labor Standards Act.

Basic hours of work under the Walsh-Healey Act are eight in any one day and 40 in any one week. Overtime is permitted, if time and one-half the basic hourly rate is paid. These overtime requirements do not apply to employers who have entered into collective bargaining agreements with bona fide representatives of their employees pursuant to certain provisions of the Fair Labor Standards Act permitting employees to work 12 hours in any day or 56 hours a week without payment of time and one-half for overtime.

In general, the employment of boys under 16 and girls under 18 years of age is prohibited. All convict labor is prohibited.

Safety, health and sanitation requirements forbid insanitary or hazardous working conditions. Compliance with the standards of the State in which the work is performed will be taken as evidence of compliance with this point.

The agencies charged with enforcing the Fair Labor Standards Act (the Federal Wage & Hour Law) and the Public Contracts Act have cooperated closely in the past and have now been merged under an order, effective Oct. 15, 1942, by the Secretary of Labor. The combined agencies are known as the Wage & Hour and Public Contracts Divisions of the U. S. Department of Labor. Both are directed by L. Metcalfe Walling, recently appointed Administrator of the Wage & Hour Division, who was also Administrator of the Public Contracts Division. The merger will greatly facilitate the work of administration, improve enforcement and at the same time spare employers the need of dealing with two inspectors.

WALSH-HEALEY ACT requires that every contractor be a manufacturer or a regular dealer in the materials or equipment supplied, except in the case of certain Defense Production Associations. Where a manufacturer buys materials for processing to fulfill his Government contract, and it is a regular practice in his industry to purchase such goods and not to manufacture them, the work performed by the supplier of these initial materials is not subject to the Act.

This does not mean, however, that a manufacturer may relieve himself of his own responsibilities under the Act merely by shifting the work to a substitute manufacturer. In such cases the contractor is liable for any violations of the Walsh-Healey Act which occur while the subcontractor is preparing materials which the manufacturer will use to fulfill his Government contract.

The Act does not prevent any person from fulfilling his bargain by supplying material from stock on hand or manufactured before the contract was awarded. It does not apply retroactively to workers who were employed before a contract was let. But the Act does apply to employees who do further work on such material, either in processing or in packing and shipping the goods, *after* a contract has been awarded.

With the exception of office, supervisory, and custodial and maintenance workers, all employees who are engaged on a Government contract will be subject to the minimum-wage and overtime provisions of the Act.

Foremen will be considered supervisory employees if they do not perform manual operations and have no direct physical contact with the goods delivered under the contract. The fact that a foreman occasionally gives a hand here and there in the course of his purely supervisory duties will not defeat the exemption.

Technical workers who are closely associated with the productive processes involved in meeting the contract are covered. Employees engaged in mixing dye formulas used in the printing of fabrics, for example, are considered engaged in manufacture.

When a covered employee works for any part of a day on a Government contract he is entitled to at least the basic minimum wage for *all* hours he worked during that week and to time and one-half for hours beyond eight in any one day or 40 during the week.

Every contractor subject to the Walsh-Healey Act must keep certain time and payroll records for each covered employee. The record-keeping requirements together with much other informative material regarding the Act, are fully discussed in Rulings and Interpretations No. 2, published by the Public Contracts Division. Copies are available without cost at all offices of the Wage & Hour and Public Contracts Divisions, including the National Office, Desk MSS, 165 West 46th St., New York.

The Walsh-Healey Act provides a number of penalties for violation. Contracts may be cancelled in cases where violations are found and employers will be liable for liquidated damages.

"Full compliance is not only good insurance," Administrator Walling said recently, "it is good business as well, because fair labor standards are the cornerstone of fair competition. The textile industry is all-too familiar with the old wage-cut price-cut cycle that played havoc with both payrolls and profits, and few employers today would welcome a return to that sort of competition."

How to Take a Manpower Inventory

Manning tables aid orderly replacement of workers drawn into armed services

The long-predicted general shortage of manpower is imminent. Practically all men of military age and fitness must enter the armed forces of our country. To asist essential industry in planning orderly withdrawals and replacement as Selective Service makes deeper and deeper inroads into the working force, the Government has prepared the Manning Table Plan. Developed jointly by the War Manpower Commission and the Selective Service System, this plan is designed to aid essential industry in solving its manpower problems in any war situation. Manufacturing plants whose business is 75% or more in war work can participate in the plan. Participation is voluntary. A detailed exposition of the plan was presented in an article in the November issue of *Factory Management and Maintenance*. The essentials of the plan are given in the following abstract of that article.

THE MANNING TABLE PLAN is devised to provide for the listing of the personnel requirements of essential war industries according to job classifications. This means a listing of jobs, not men. Its immediate objectives are to facilitate the orderly withdrawal of replaceable workers from essential industries into the armed services in the inverse order of their essentiality, and to provide for their replacement by workers taken from reserve labor sources with the least possible disturbance to production. Its further objectives are to provide the basis of a complete inventory of essential manpower needs; to reveal to employers the necessity and the opportunity for training and upgrading of workers; to call to their attention ways in which women, older workers, and handicapped workers may be utilized; and to provide the necessary data for a reasonably accurate forecast of future labor requirements.

The plan will provide the justification for deferment of men in essential positions when such action is in accordance with Selective Service regulations. A Manning Table is prepared by an employer and is then officially validated. After that it serves as a guide to local Selective Service Boards in determining deferments.

PROCEDURE. A prospective applicant obtains, fills out, and returns a Manning Table application issued by the Regional or Area Director of the War Manpower Commission nearest him. If the application is approved, the applicant will receive five copies of a Manning Table with instructions for compiling it. A Manning Table is filled out for one plant, not a department and not a company having several plants.

The applicant retains one copy and forwards the other four to the Regional or Area WMC Director who arranges for validation, retains one copy, sends one to the State Director of Selective Service, one to the Area Director of the United States Employment Service, and one to Washington.

The Manning Table must be accepted by the State Director of Selective Service of the state in which the plant is located before it is applicable to any Selective Service activity. When the State Director has accepted the plan, he will assign a State Acceptance Number to the employer, who will then be authorized to use this number and to place a prescribed State Acceptance Stamp on the Affidavit—Occupation Classification indicating that the time for replacement of an employee is in accordance with the table.

When an employer has been notified that his table has been accepted, he is authorized to use the State Acceptance Stamp on the Affidavits (Form 42A, obtainable from Selective Service Board) which were filed in accordance therewith. The employer will file Forms 42A for all employees within the ages liable to military service for whom occupational deferment is then necessary. Forms 42A filed under the Manning Table Plan and bearing the authorized State stamp will be forwarded by the employer direct to the local board and will supersede any previous requests for occupational deferment. The new Form 42A will show how long it will take to replace the employee, the time indicated being taken from the accepted Manning Table.

Until further notice, it will not be necessary to file a Form 42A for registrants who have wives and children or for registrants who have children, with whom they maintain a bona fide family relationship. The employer should, however, file an Occupational Certification by Employer (Form 42B) for such employees, and whenever the Director of Selective Service determines that it is necessary to reclassify men in this status, the employer may file a Form 42A. This will enable the local board properly to classify the registrant, and to notify the employer if the registrant is classified or reclassified.

When an employer has filed Form 42A or 42B for a registrant, the local board will be required to notify the employer on Notice to Employer, Form 59 revised, whenever the registrant is classified or reclassified for selective service.

When an employer has filed an Affidavit, Form 42A, for a registrant, this form shall be considered to be written evidence of the occupational necessity of the registrant, and the employer may appeal to a Board of Appeal from any

Schedule A is filled in with occupational identification data.

War Manpower Commission
WMC Form No.

MANNING TABLE
Schedule A

Sheet . . of . . Sheets

Line Number	OCCUPATIONAL IDENTIFICATION DATA			Minimum Training Time (hrs.)	Present Number Employed				
	Plant Job Title	Occupational Dictionary Job Title	Dict. & Plant Code		White		Other		Total
					M	F	M	F	
	1	2	3	4	5	6	7	8	9

classification of the registrant by the local board, under section 627.2, Selective Service Regulations.

Full responsibility for classification as prescribed in Selective Service Regulations remains with the local board, and all classifications are subject to the usual appeal procedures.

The acceptance of the State Director and the use of the approved State Stamp informs the local board that careful consideration has been given by the employer, the War Manpower Commission, and by the State Director of Selective Service to occupational classification requirements and the time required to replace registrants.

HOW TO PREPARE MANNING TABLES. The Manning Table consists of a cover sheet (not shown here) and Schedules A, B, and C, which are illustrated. Detailed instructions for filling in the schedules have been issued by WMC. Briefly, the procedure is as follows:

On Schedule A enter in Column 1 the official title by which the job is known in the plant. Because the same job is often known by different titles in different plants, it is necessary that each plant Job Title entered in Column 1 be described accurately. The company preparing the Manning Table may either relate its plant Job Titles to the "Dictionary of Occupational Titles" or may submit a job description for each plant Job Title. ("The Dictionary of Occupational Titles," Part 1, may be purchased from the Superintendent of Documents, Washington, D. C., for $2.) The Job Titles as found in the dictionary should be entered in Column 2. Enter in the upper half of Column 3 the code number in the dictionary which corresponds to the title in Column 2. Enter in Column 4 the minimum training time, in hours, that it takes an inexperienced person to reach normal efficiency. Enter in Column 5 the number of white male workers employed in each job; in Column 6 the number of white female workers; in Column 7, non-white male workers; in Column 8 non-white female workers; in Column 9, the total number of workers.

If no women are now employed on a job, place an "S," which indicates suitability, in Column 6 if you believe the job could be done by women. For purposes of the Manning Table, the criterion for suitability for women will be largely that of physical strength.

On Schedule B in Column 10 enter the percentage to the nearest 1/10 of 1% of the number of workers in each occupation in relation to the total number of workers in the department. In Column 11 enter the percentage to the nearest 1/10 of 1% of the number of workers in each occupation in relation to the total number of workers in the plant. If handicapped workers are now employed, enter an "X" in Column 12. If the plant expects to re-engineer a job within the next 6 months so that persons with fewer skills and more limited knowledge can be substituted for the all-round skilled person now required, enter an "X" in Column 13. Columns 14 through 26 should indicate the number of persons in addition to those now employed who will be needed to meet current or increased production schedules.

On Schedule C, enter in Column 27 the number of male employees under 20 years of age now working in the plant who are single; enter in Column 28 the number of male employees under 20 years of age now working in the plant who are married. Enter in Column 29 the number of male employees under 20 years of age now working in the plant who are married and have more than one dependent. Enter in Column 45 the total number of male workers now employed in the plant. Offices of Regional Directors, War Manpower Commission, from whom applications for participation in the Manning Table Plan can be obtained are given in the accompanying table.

War Manpower Commission
WMC Form No.

MANNING TABLE
Schedule B

Sheet . . of . . Sheets

Line Number	Percentage		Job Filled by Handicapped Workers	Job to Be Re-engineered (Job Breakdown)	ADDITIONAL FUTURE LABOR NEEDS											
					Supplied From Within Plant		RECRUITED FROM OUTSIDE PLANT									
							Monthly Requirements					Max. Needs		Min. Experience Required		
	By Dept.	By Plant			Upgraded	Transferred	Current Month	2nd Month	3rd & 4th Months	5th & 6th Months	Total 6 Months	Number	Date	Same Experience	Related Experience	Trainees	Inexperienced
	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26

Schedule B is filled in with data on future labor needs.

Offices of Regional Directors, War Manpower Commission

REGION I—Maine, New Hampshire, Connecticut, Rhode Island, Massachusetts
10 Post Office Square Bldg., Boston

REGION II—New York
c/o Social Security Board Office,
11 W. 42nd St., New York

REGION III — Pennsylvania, Delaware, New Jersey
750 Suburban Station Bldg.,
1617 Pennsylvania Blvd., Philadelphia

REGION IV—Maryland, Virginia and West Virginia, Washington, D. C., and North Carolina
c/o NYA, 2145 C St., N. W., Washington, D. C.

REGION V—Ohio, Kentucky, Michigan
521 Union Commerce Bldg.
Euclid Ave. and E. 9th St., Cleveland

REGION VI—Indiana, Illinois, Wisconsin
c/o Social Security Board Office,
105 West Adams St., Chicago

REGION VII—Alabama, Florida, Georgia, Mississippi, South Carolina, and Tennessee
1630 Candler Bldg., Atlanta

REGION VIII—Minnesota, Iowa, N. Dakota, S. Dakota, and Nebraska
c/o Social Security Board Office
Midland Bank Bldg.
Fourth and Second Sts., Minneapolis

REGION IX—Missouri, Arkansas, Kansas, and Oklahoma
414 Kierks Bldg., 1006 Grand Ave., Kansas City, Mo.

REGION X—Texas, Louisiana, New Mexico
Post Office Box 957, Austin, Texas

REGION XI—Montana, Wyoming, Idaho, Utah, and Colorado
728 Patterson Bldg., Denver

REGION XII—California, Arizona, Oregon, Washington, and Nevada
245 Furniture Mart Bldg., San Francisco

Schedule C is filled in with selective service data.

War Manpower Commission
WMC Form No.

MANNING TABLE
Schedule C
SELECTIVE SERVICE DATA

Sheet . . . of . . . Sheets

Line Number	Under 20			20 Through 26			27 Through 32			33 Through 38			39 Through 44			45 and Over			Total Males
	Single	Married	Married & Dependents	Single	Married	Married & Dependents	Single	Married	Married & Dependents	Single	Married	Married & Dependents	Single	Married	Married & Dependents	Single	Married	Married & Dependents	
	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45

New Employees Trained Quickly

Textile mills get good results with WMC Training Within Industry Program

By THOMAS O. OTT, JR.
Southern Editor, TEXTILE WORLD

MANY MILL MANAGERS, superintendents, and personnel directors speak highly of the Training Within Industry Program initiated by WPB and now being conducted by WMC. An important part of the program is the Job Instructor Training Service. Mills using the new training methods are getting good results from them. This includes mills that have their own vocational training programs. More and more textile workers are being trained by TWI methods, and are being trained much more rapidly than by the methods formerly employed in many plants.

Case histories, kept by one hosiery mill executive, of individual employee progress trained by JIT methods of instruction prove that the training period can be materially shortened. Operatives with no previous experience show very rapid progress on a variety of jobs. Training time for one job was reduced from 6 months to 7 weeks; another from 6 months to 6 weeks; and another from 6 weeks to 6 days. The instructor reported that under JIT methods a fixer in two weeks gained a good understanding of fixing of a type of machine with which he previously was unfamiliar.

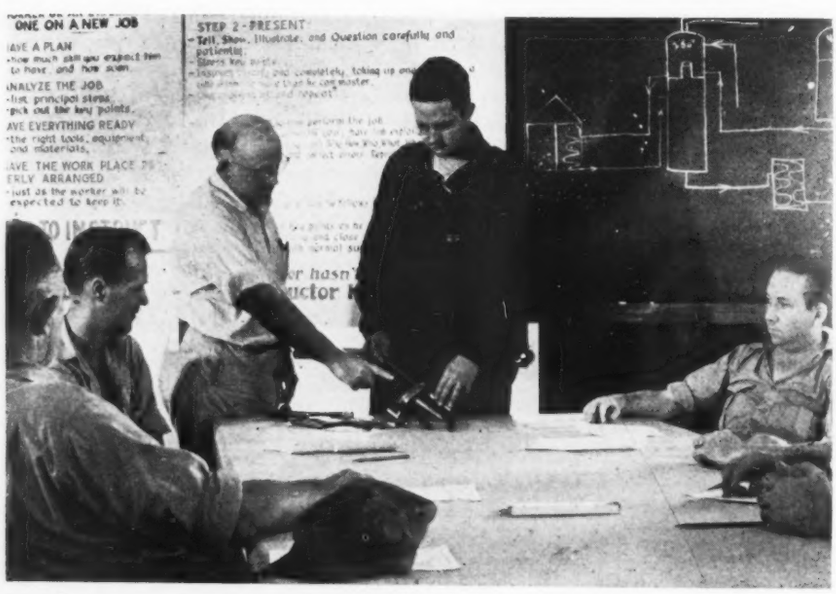
★ ★ ★ "All industry training programs should be stepped up."—From recommendation of U. S. Senate sub-committee on manpower. ★ ★ ★

One cotton mill superintendent puts a girl to be trained as a spinner under a second hand, section man, or worker who has had the training as a job instructor, and the girl is trained in half the time required by the old haphazard method of training. The same thing is true of weaving and other skilled jobs in the mill. This is unusual, but one of his second hands trained a girl to run a set of C & K looms on pattern work in three weeks, and one of his spinning room section hands trained a boy to doff and do his own end piecing in two weeks, at which time the boy was estimated to be 80% efficient. One girl was trained to operate a Barber-Colman drawing-in machine on pattern work, and at the end of two weeks she was doing 65% as much work as the skilled men who had been operating the machine from 10 to 20 years.

THE TRAINING WITHIN INDUSTRY DIVISION of the WMC is a national war agency, staffed by training and personnel consultants from industry, to assist contractors and sub-contractors to meet their increased needs for skilled workers and supervisors. It assists war industries to meet their manpower needs by training within industry each worker to make the fullest use of his best skill up to the maximum of his individual ability, thereby enabling production to keep pace with war demands. Since it is an advisory and assisting agency, it does not and cannot tell industries how to run their business, but it gives every possible assistance upon request. Training Within Industry deals with an industry's own personnel responsibilities. Special attention is given to:

1. Upgrading of all classes of personnel as their experience and abilities warrant, through intensive job instruction, rotation, and progression. Each plant takes stock of the experience and latent possibilities of its own personnel before hiring or training new workers.
2. Development of all-round skilled mechanics in limited numbers, through trade apprenticeship, in accordance with Federal Committee on Apprenticeship of the Department of Labor.
3. Development of production specialists through intensive instruction on the job.
4. Development of supervisors, and technical and other management assistants, through careful selection, assignment of more responsible supervisory duties, and provision for organized help through discussions and conferences under both plant and outside auspices.

Also included in the TWI division is a group of specialists from industry banded together to render specific advisory assistance to war industries in inaugurating programs which they carry out at their own expense and in their own plants. There is no authority to enter a plant on any basis other than a basis of cooperation. TWI assists in-



At job instructor training sessions men who know their jobs are taught how to pass on that knowledge to others in a simple, effective, and rapid manner.

TWI District Offices in Textile Areas

Northern New England—Maine, Massachusetts, Vermont, New Hampshire.
Room 1033, Park Sq. Bldg.
Boston, Mass. (Hubbard 0380)

Southern New England — Connecticut, Rhode Island.
Room 513, 152 Temple St.
New Haven, Conn. (6-5186)

Upstate New York.
Room 1112, 112 State St.
Albany, N. Y. (Albany 5-6251)

Metropolitan New York.
Room 2026, 11 W. 42d St.
New York, N. Y. (Murray-Hill 3-6805)

New Jersey.
Room 601, 605 Broad St.
Newark, N. J. (Mitchell 2-1114)

Maryland.
Room 3106, Baltimore Trust Bldg.
Baltimore Maryland (Plaza 1654)

Atlantic Central — Virginia, North and South Carolina.
Raleigh Bldg., Fayetteville & Hargett Sts.
Raleigh, N. C. (2-3306)

Southeastern — Georgia, Florida, Alabama, Mississippi, Central and Eastern Tennessee.
Georgia School of Technology
225 North Avenue, N. W.
Atlanta, Ga. (Hemlock 6890)

dustry in four general ways modified to fit conditions in each specific plant by:

1. Help on analysis of a plant's training needs.

2. Aid in setting up a program within a plant to meet its needs.

3. Transmitting through a field organization the experience of other employees who have met their training problems.

4. Aiding in the most effective use of tax-supported Government agency services, such as State and Federal employment services, vocational trade schools, engineering colleges, etc., by interpreting the industry's job requirements to these agencies.

Job Relations Training and Job Methods Training programs are under development now and will be offered to textile mills at an early date.

Related sources of training outside industry are being provided for by Vocational Education for National Defense, through public and private schools, and by Engineering, Science, and Management Defense Training Courses of the U. S. Office of Education in colleges. Many people of supervisory capacity have been trained under these short courses. TWI is a coordinating body in helping mills place qualified employees in such training courses.

TRAINING OF JOB INSTRUCTORS is carried out by TWI instructors without expense to the mill. Employers select overseers, foremen, or other employees to take the courses, giving due consideration to each person's qualifications as a prospective teacher. To qualify to take the training, a person must have sufficient education to grasp the content of the course and be able to return to the mill and conduct courses of five 2-hr. sessions. These student teachers should be highly regarded by both superiors and subordinates and should know the job they are going to teach. Job instructor training does not teach men to spin or weave, for example. What it does do is to show overseers, second hands, etc., who know how to spin or weave to pass along that kwowledge to others in a simple, effective, and rapid manner.

Training of job instructors is best carried out in groups of about 12. If a mill has only a few employees to take the training course, arrangements can be made so that men from two or more mills can meet in a mutually convenient locality.

To get the TWI program started, all that is necessary is for a company to notify the representative of the district in which the company is located. A schedule supervisor will call at the plant to meet with the superintendent, personnel manager, or other executives to complete all arrangements. A list of TWI districts in textile areas is given in the accompanying table.

New Types of Bombs Bring New Defense Methods

A CHANGE in bomb-defense plans and techniques lately announced by the Office of Civilian Defense is briefly summarized below and should be considered as an amendment to articles on this subject contained in our February, 1942, and July, 1942, issues.

In general the newer types of incendiary bombs are all explosive, either delayed or immediate, and necessitate speedier handling. The slow water-spray or sand treatments are to be avoided, and all bombs should be approached with caution. Ample water facilities are necessary and a heavy stream should be used immediately. The fire-fighter should take the best cover available in expectation of a fairly violent explosion if the bomb is not previously extinguished.

The new bombs as described by OCD are as follows:

1. A 5-lb. "incendiary and anti-personnel" bomb similar to the familiar 2.2-lb. magnesium-thermit bomb except that it is larger, measuring 21 in. overall, and carries in the nose a large explosive charge. The incendiary section of the bomb ignites upon landing, and the explosive charge goes off at any time up to seven minutes later. To avoid harm from the explosion, the fire fighter should assume a crouching or prone position behind the best available cover. A brick wall 4½ in. thick affords full protection. Lath and plaster walls, wooden doors, tables or chairs do not offer full protection. Unless the bomb falls where it can do no harm, it should be attacked at once in spite of the danger, as if left alone until after the explosion it will set most of the building on fire. Throwing sand on the bomb before it explodes does little good, as the sand will be thrown off in the explosion. This bomb will break through the roof and attic floor of small dwellings, and through the roof of a mill unless of very strong construction.

2. A combination incendiary and high-explosive bomb, 30 in. long and 8 in. in diameter, which splits open on landing and throws out 60 small thermit-type incendiaries and six large magnesium-type incendiaries. Almost immediately after landing a 12-lb. charge of TNT in the nose of the bomb explodes with a shock great enough to wreck a small structure or blow out the wall of a substantial building. Nothing can be done about the bomb itself; the fires it starts should be attacked in the usual fashion. The 66 separate fireballs tossed out by this bomb would carry at least 50 yards in the open, and are sent still further by the explosion.

3. A non-explosive bomb of similar appearance to No. 2 which scatters a sticky mixture of oil and phosphorous, which catches fire at once and can be put out only by wetting. As soon as the liquid dries, it catches fire again.

4. A Japanese bomb weighing about 110 lb. and containing thermit and rectangular rubber-impregnated incendiary pellets which scatter widely and start small fires which may be attacked immediately.

Civilian Worsted Quotas Raised

WPB sees threat to worsted branch of industry—Army order backlog lessens

THE SITUATION confronting worsted mills has been given consideration in the recent plan of WPB in almost doubling the raw wool quotas allotted to them for civilian use for the period ending July 31, 1943. The assignment of quotas in the future is likely to proceed in six-month steps, coinciding partly with the spring and fall seasons of the market. The 1943 increases granted to worsted mills over and above the quotas for the last half of 1942 have been applied to the past period also and the additional amounts allocated for use this December and January.

A new feature—permission for mills to carry into the succeeding quarter unused portions of quotas for the expiring quarter, will help many manufacturers out of earlier dilemmas. Mills may not borrow from a future quarter to put into the works in advance.

The new basis for civilian production by worsted mills is 15% per quarter for their basic unrestricted quota based on half of the individual wool consumption of each mill in the first six months of 1941. This quota, since last Aug. 3, has been 10% per quarter. An additional 5% is now added to the allowable consumption for both December and January, which makes the over-all increase apply to the wool year as a whole. In addition to the unrestricted quota (which may be used in 100% wool fabrics), worsted mills are allotted 20% of their base figure quarterly for a "blend quota" which may be used only in fabrics containing not more than 65% new wool. This amount is 7½% over the quarterly basis current in the last five months. The previous limitation of 20% as the minimum new wool content in a blended fabric has been removed entirely.

Woolen wool quotas are extended through the first half of 1943 without change—2½% quarterly, which may be used in any product containing 20% or more new wool, and 12½% quarterly, which may be used only in products containing not over 65% of new wool.

WASHINGTON COMMENT indicates that the changes in quantities of new worsted wool thus released for use by the civilian population has been brought about because military demands for worsted fabrics will run at a somewhat reduced rate for the first six months of 1943. Wool, however, as a commodity, is still on the critical list, and imports must be maintained if the situation is to be held in balance since unsold stocks in hands of manufacturers and dealers are said to be still on the down curve. The new clip domestic wool supply, of course, will not become available till late next spring or early next summer.

The fact that worsted mills are limited in their useable raw materials to certain staple lengths was apparently taken into consideration, in expanding their allotment. Similarly the fact that wool wastes such as noils and clips are available to woolen mills for unrestricted use was probably considered in the decision to let their new wool allotment go unchanged. Mohair and some other hair fibers are on the unrestricted list, but certain types of alpaca have lately been frozen by WPB and limited in the future to Government use.

Back of these recent wool enactments lie many considerations among which are: the necessity of maintaining adequate supplies of civilian clothing; the desire to keep worsted mills in steady operation so that should military needs suddenly step up, the plants will be ready and manned to turn more production into those channels; the request by labor that more blended goods be further encouraged to avoid unemployment in mills which may soon have reduced volumes of Government orders; the desire of the Government to accumulate a wool stock-pile, said in some quarters to have a goal of 1,000,000,000 lb.; the South American situation where wool clips now lack their customary European markets and where our "good neighbor policy" is at stake; the political strength of the domestic clip with various plans in the wind for direct benefit to wool growers.

It was pointed out by the WPB wool authorities that a large part of the civilian wool fabric supply for next fall will come from the proposed increased worsted production. Though WPB has insisted that raw wool supply outlook is little if any brighter, informed private opinion differed on this point. Wool was tight after the Jap attack, because it was feared the Japs might take Australia. Now it seems apparent that the spread of the Nippon rash has been stopped. Likewise the Nazi submarine menace to wool imports from Africa and South America is much reduced. If this means anything the wool supply should be easier next year.

WORSTED MILLS in New England have been turning out cloth with a rapid reduction of backlog orders, and, unless substantial contracts come from Government or civilian sources in the near future, unemployment is ahead in some of these plants. As yet there has been no dropping or laying off of employees, but manufacturers have been anxious about the situation. The woolen branch of the industry, however, in contrast appears headed for six months' full production in 1943.

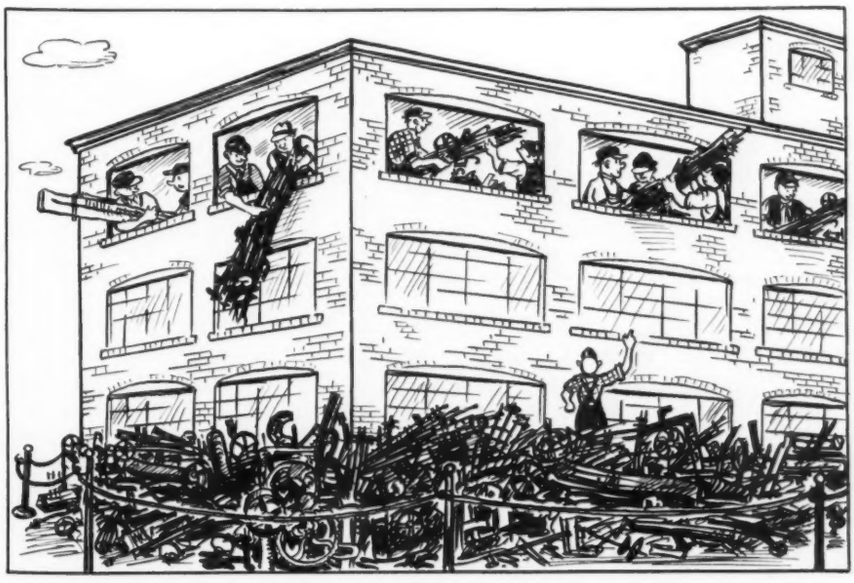
The full utilization of the blend quotas by worsted mills remains a point on which there is a variety of opinion. It seems to boil down to belief that blends will not be taken by the clothing houses which normally take the all-worsteds until those houses are forced to it by inadequacy of the all-worsted supply or evidence that the consumer is hungry for blends. The latter seems most unlikely. Worsted mills are generally open-minded to the extent that they will make what they can sell. However, they shrink from getting into a line which they may regard as foreign to their regular trade. Mills which have made their names synonymous with all-wool worsted will probably put another name on their blends. However, some reputable manufacturers have had blends in their lines under their regular mill tickets for several years and these concerns are in position now merely to make more of the same.

WPB and labor officials will watch the early results of the increased worsted wool allotments closely. With some part time already in Lawrence, and with other war industries nearby supplying full employment at good pay, skilled workers will be lost to the worsted industry unless the present plans bear the expected fruit. The industry must expect more exacting supervision, say some observers, if the present permissive plan does not work to labor's advantage.

Little Things to Heave at Hitler

1,600,000 lb. of scrap from Coats sets mark for other textile mills to equal

By GEORGE H. ARRIS



"Out the window they must go," has been the theme song of the J & P Coats scrap collection drive.

WORKMEN ROPED OFF THE STREET recently in front of Mill No. 3 at J. & P. Coats, Inc., Pawtucket, R. I., and began throwing spinning frames out the third-story windows. From Uncle Sam's point of view, it was an impressive pile of precious iron and steel scrap, which continued to grow. From the viewpoint of the textile industry's contribution to the scrap salvage program, it was the beginning of a junk heap which organized and systematic effort on the part of Coats' officials intend to raise to a minimum of 1,600,000 lb. before the collection drive is finished, and from this one mill alone.

These were fairly good looking spinning frames that were going to pieces under sledge-hammer blows and dropping to the street below. There were some 86 frames in Mill No. 3. Together with a row or two of slubbers, they stood in even ranks across the big 36,000-sq.ft. top floor, their motors still attached. A turn of a switch and they would have run, and spun cotton yarn. But they were old and outdated —old Fales & Jenckes and Howard & Bullock 1912 vintages. They had been idle for a long, long time. Now that Uncle Sam needed them, they were on their way to war.

J. Colby Lewis, head of the Rhode Island unit of J. & P. Coats, Inc., is the motivating energy behind the mill's scrap drive which is setting records in the textile industry in this section of New England. There are a dozen or more big brick mill buildings in the rambling Coats plant which spreads over 35 acres in Pawtucket. Each mill is an entity in that it has its own manager and supervising personnel. Early in October, when the national drive to collect scrap was becoming intensified, Mr. Lewis called the heads of his mills together and said: "Survey your mills. Uncover everything we can get along without. Report to me what can be scrapped."

At the same time a separate salvage committee was established within the plant, whose job was to ferret out useless metal. Nothing was considered too large. Nothing too small or insignificant. The rule was: "Is it worth more to the war effort than it is to us?"

THINGS THEN BEGAN TO HAPPEN. Memos began coming back about sections of shafting, about castings, old dissolving tanks, and dyehouse hoods. The salvage crew began finding old mop pails, iron arms on old office chairs, dusty pieces of iron and parts which had lain for years in stock-room drawers. Somebody produced a rusty hydrant, which in years gone by had done duty in the fire-fighting system.

The psychology of throwing away things imbued the entire work force of more than 4,000 operatives, who went about their work hunting for "little things to heave at Hitler." And they have been adding importantly to the piles in the millyard which have grown daily, notwithstanding that two scrap iron dealers have been carting away the scrap as quickly as possible.

The choice of what is to be discarded and what kept has rested largely with individual mill chiefs under pressure of Mr. Lewis and his salvage committee, whose password has become "Why can't that be junked?"

Over 100 spinning frames—102, to be exact—so far have proved the largest single contribution. Next in importance has been the cast-iron water pipe discovered by the scrap committee in a warehouse purchased many years ago. There were 50 tons of it. The committee's third plum was the economizer which had long ago outlived its function as a power-house accessory. Built of iron pipes—50 tons of them, it was added to the pile.

A boiler feed pump was found. The committee dug up great numbers of dobby heads from old looms. It pulled out an old kier that served the bleachery no longer. And it dismantled, disconnected, ripped out, or broke up with hammers thousands of pounds of rods, big and little castings, grates, tanks, vat hoods, wire, fencing, and myriads of tiny parts, all worth saving.

The total collection, when the mill finishes its drive, will weigh at least 1,600,000 lb. Mr. Lewis confidently believes it will amount to a great deal more than that.

Although the country is being served and a good job done on locating urgently needed metal, the company, too, will benefit physically from the "dry-cleaning" it is undergoing. A lot of space, heretofore filled with junk, can now become productive.

Production of Coated Fabrics

The application of polyvinyl resins to textiles for military and civilian use

By JOHN B. CLEAVELAND
Vice-president, Cleaveland Laboratories & Mfg. Co.

USE OF SYNTHETIC RESINS of various types for production of better coated finishes on fabrics is one of the more important developments of chemical research brought to the fore by the war. The value of these coated fabrics is being clearly demonstrated for both military and civilian purposes by the enormous increased uses to which they are put. Synthetic resins are replacing rubber almost entirely for chemical-proof and waterproof coatings, and the results are so promising that an ever-increasing replacement may be expected. They are also replacing pyroxylin, other cellulose finishes, and drying oils with great improvement of quality. It is evident that when the war is over and the experience now being amassed by chemists is made available to civilian production, many lines of coated fabrics will be revolutionized.

The resins that are probably most in demand by Government procurement agencies are derived from the polymerization of vinyl chloride or the co-polymerization of vinyl chloride and vinyl acetate. These resins generally are readily soluble in easily obtainable solvents and with slightly modified coating procedures may be handled on either rubber-fabricating equipment, such as calenders and mills, or on pyroxylin spreader or roller coating machines.

Properly plasticized, the polyvinyl resins exhibit an elasticity and resistance to hot and cold temperatures that rival rubber, and their weathering qualities are much superior. The strength and abrasion resistance of their films are surprising. To a great extent the coated fabrics partake of the properties of the resins, and much work is being done at present to explore their value for increasing the strength of a fabric without altering its appearance or hand. In general, the coatings are resistant to cold, heat, water, mild acids and alkalis, oils, ultra-violet rays, and flexing.

The polymerized vinyl resin solutions exhibit a property known as thixotropism—a tendency to thicken or gel upon standing or upon cooling. For this reason, it is necessary to heat the solutions to a point where they remain fluid and to coat at this temperature. Although inconvenient, this presents no insurmountable obstacles. One way of maintaining the proper temperature is to keep the drums of solution in a trough filled with water at a controlled temperature. Another is to keep the drums in a hot room until needed in the coating department. The compound is generally used up before need for re-heating.

Fig. 1. The polyvinyl resin is dissolved in suitable solvents by the aid of simple mixing equipment.

COATING METHOD. The knife spreader coating machine of common design is utilized to apply the compound to the fabric. The knife is sometimes heated by steam or electricity to insure the smoothness of the thermoplastic polyvinyl coating. The coated fabrics then pass into a drying box, which should be heated to a comparatively high temperature. The resin retains solvents for an abnormally long time, but this tendency is minimized at elevated temperatures.

To improve its appearance and feel, the coated cloth is frequently calendered by friction or pressure. This is done in the early stages of coating, since the heated rolls rough up a heavily thermoplastic coated fabric. The various steps employed in the coating process are shown in the accompanying illustrations.

The lightness and strength of very thin films of polyvinyl chloride are of great value in the production of lightweight airplane camouflage paulins that may be carried in the plane at all times with a minimum of dead weight added. The paulin is a strong rayon fabric with a coating of white on one side and dark olive drab on the other. Such a fabric will withstand the cold of the Arctic without cracking and the heat of the tropics without tackiness. The vinyl resins are being employed

Fig. 2. (Left) Drums of finished solution are stored in a constant-temperature water bath a few hours before using.

Fig. 4. (Below) the coated fabric is friction calendered to give a smooth appearance and feel.

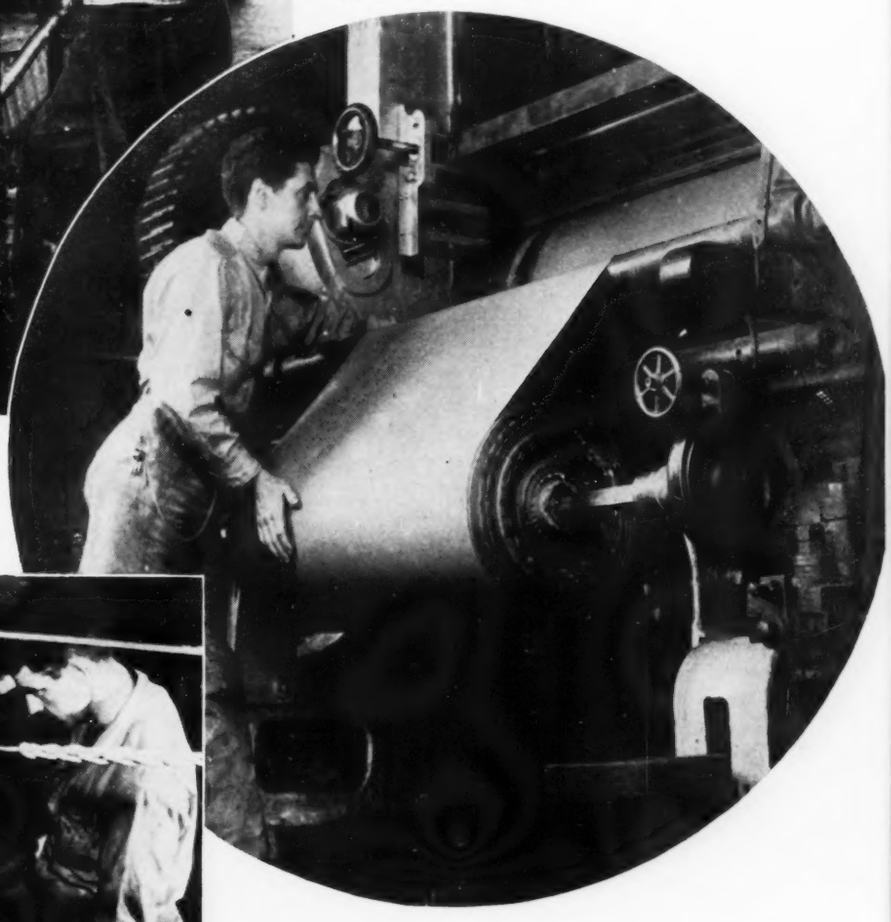


Fig. 3. (Below) A conventional knife spreader coating machine can be used for applying the compound to the fabric.

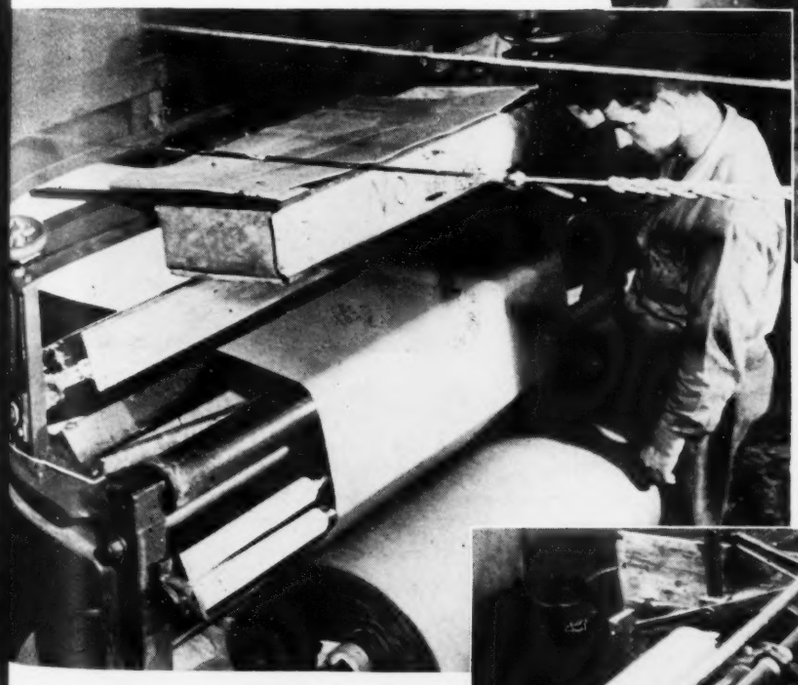
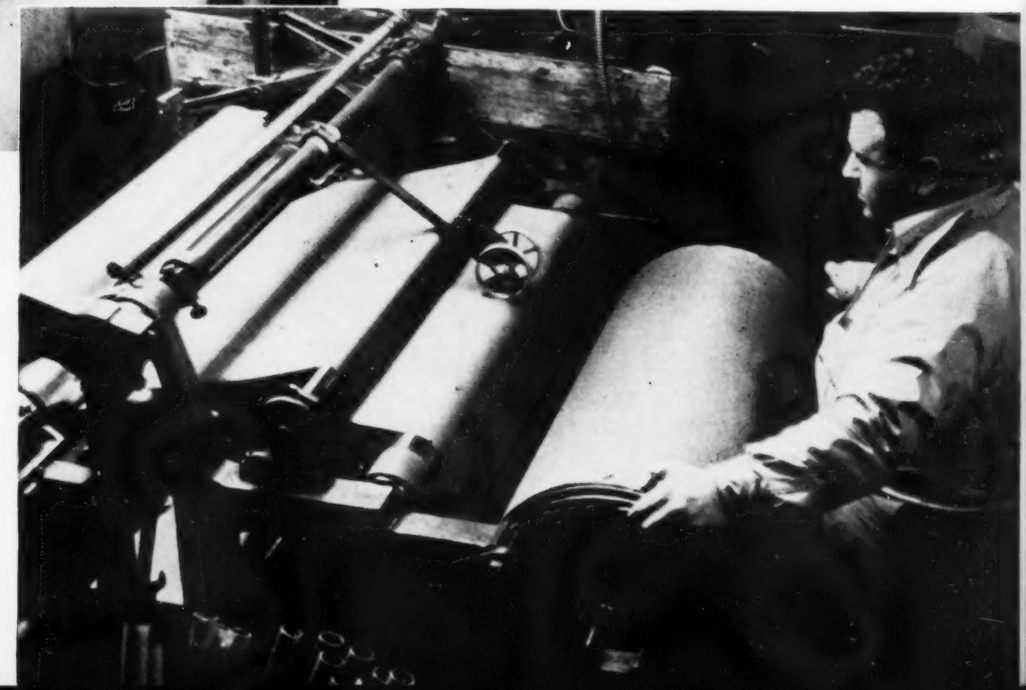


Fig. 5. (Below) careful inspection under lights of the proper daylight color assures the high quality of the coated fabric.



also for coating type HH cotton balloon cloth used in manufacture of mountain tents for the Army. (See page 80.)

Textile chemists are busy not only seeking ways of improving the coatings for our war effort, but also in planning the place these synthetic resins will hold in building better fabrics in a better world for us all. It can be expected, therefore, that these compounds will find many new applications.

Suggests Overall Manpower Control

Price control, taxes, research, and postwar problems discussed by NCCMA

"**THE PROBLEM OF MANPOWER** overshadows all other difficulties afflicting the cotton-textile industry, and will not be solved until the Government develops a sound workable plan that will put an end to the loss of key men to the armed services, and to the aimless drifting of labor from plant to plant and industry to industry," Dr. Claudius T. Murchison, president of the Cotton-Textile Institute, told the North Carolina Cotton Manufacturers Association at its 36th annual meeting in Charlotte on Nov. 12. W. H. Ruffin, president of the association, outlined the major industry-wide problems of manpower, price ceilings, taxes, dislocation of plants on goods for the armed forces, shortage of supplies and raw materials, and the financial and post-war situation. Shortage of trained executive and administrative assistants is probably felt more keenly than the shortage of labor, said Mr. Ruffin.

Counsellors on taxation and traffic presented their interpretations on questions of interest to the manufacturers. Safety contest awards in the Seventh Statewide Textile Safety Contest were made by M. W. Heiss of Greensboro, N. C., and T. A. Wilson, of the North Carolina Industrial Commission. C. A. Cannon, chairman of the committee on cotton, advised members that some mills have found boxed cotton samples sent out by Department of Agriculture to be below the key standards. Such samples should be returned for a recheck or the mills will find themselves buying cotton below their regular standard.

Labor turnover rates have increased from 6,200 separations per month in 1939, in a textile industry then employing 400,000 workers, to 37,000 separations per month in the first half of 1942 with over 500,000 workers employed, according to Dr. Murchison. This enormous turnover, he explained, creates a serious problem for mills which are forced to find replacements in a labor market that contains no skilled help, resulting in a loss in efficiency of at least 5%. Since cotton-textiles are essential to the war effort, and Government officials are urging mills to push production to still higher levels, this decrease in efficiency from an abnormally high labor turnover is a matter to be corrected by appropriate Governmental action.

Dean Thos. Nelson (left) of N. C. Textile School; B. B. Gossett (center), president and treasurer, Chadwick Hoskins Co.; and A. G. Myers (right), president, Textiles Inc., at Charlotte.

He strongly urged that the Wage-and-Hour Law Administrator increase the percentage of learners that each mill can employ in order partly to offset the wartime drain on manpower, and he also asked for the relaxation of the Walsh-Healey Law to permit the employment of women between 16 and 18 years of age on Governmental contracts. (This action has been taken: see page 62.) Dr. Murchison advised mills to survey the selective service ratings of the men in their employ and submit lists of key men to the local draft board.

Complete cost data on all types of textile products called for by OPA is of great concern to manufacturers, stressed Dr. Murchison. Activities of OPA are more important than those of WPB since the activities of WPB do not carry with them the dangers of economic ruin in case of errors in judgment. Complete cost surveys involve utilization of large forces of new and inexperienced clerical help; and it is doubted that there is a sufficient force of experienced personnel in OPA properly to digest the data. When all the work is done the wide divergence in costs from mill to mill will make it necessary to resort to average costs. Profit margins will not have the same equity for any two mills. There is always the fear that OPA may decide to regulate profits which is not the purpose of the Price Control Act.

Many things now being done in Washington are apparently harmless in themselves, but establish precedents that carry grave threats in the post-war future, declared Dr. Murchison. Decisions of Government agencies under NLRA have resulted in principles being evolved which give end-results different from anything intended. The American people, if they could visualize these end-results and their implications, might move to stop them, he believed.

As an industry we are just awakening to the importance of research, he said. Mills must prepare for an era of swift and far-reaching change by being ready at all times to apply the fruits of the laboratory to manufacturing processes, and the results of market research to merchandising problems. Only by intelligent and unremitting research can the industry consolidate and extend its gains made under pressure of wartime necessity. Cotton-textile mills must be prepared for an unrelenting struggle if they wish to protect their markets from dangerous inroads by competitive fibers.

John T. Wigington (left), director of research, Cotton-Textile Institute, Inc., Clemson, S. C., and Prof. G. H. Dunlap, research supervisor for several organizations, who has become associated with the Cotton-Textile Institute.

MILLS MUST PLACE FIRST in their policies the maximum service to our armed forces, advised Mr. Ruffin in his presidential address. After that the most important thing to do is to see that mills get proper consideration from Governmental authorities, not just as to profit margins left before taxes, but also as-

to net profits left after taxes with which to maintain and carry on the industry including necessary replacements of machinery that is now rapidly depreciating. Another most important function today, he said, is the conservation of financial resources to meet the heavy taxes and to prevent bankruptcy.

The vast and all-inclusive economic control of all business and industry just set up by the President's order, with Associate Justice James F. Byrnes as administrator, gives one man the decision of life and death over industry, Mr. Ruffin said. He expressed the belief, however, that Justice Byrnes as administrator will be fair and impartial. He added that the textile industry is relieved to hear that downward revisions in price ceilings are not now being contemplated. It is further hoped that cotton goods with inadequate margins for profits in the ceiling price may have an upward revision.

No other drastic machine or product changes are in sight, Mr. Ruffin reported. In the coming months the problem of obtaining supplies needed for machine operation, repair, and maintenance of building and machinery, packing materials, etc., increase.

Post-war conditions held a tremendous threat for industry in the doctrine of free trade now coming to the front for discussion in this country, Mr. Ruffin said. In due time, with world free trade, desirable parity prices for domestic cotton and high wages for American workers seem impossible to maintain without subsidies. The need is apparent today for strong, vigorous State and sectional associations to retain the services of trained statisticians and economists, he said, and more than ever the valuable services rendered by the Cotton-Textile Institute are appreciated.

E. O. Fitzsimons, secretary-treasurer, Carded Yarn Group (left) and Frederick Jackson, Universal Winding Co. Mr. Jackson, constant convention attendant for 40 years, is telling Mr. Fitzsimons about his latest great-grandson, another Frederick Jackson.

North Carolina association officers: (left to right) E. A. Smyth, III, newly elected president; Wm. H. Ruffin, retiring president; Hunter Marshall, secretary-treasurer; R. A. Spaugh, Jr., first vice-president.

TRUCK RATES on textile products to the New York, Philadelphia, and Baltimore areas are in the limelight because of proposed increases of from 10% to 20% in rates from North Carolina. The case was assigned for hearing on Nov. 30, and every effort was to be made to sustain the contention that the increases should not become effective according to Carl R. Cunningham, manager of the Traffic Department. The Office of Defense Transportation is considering issuance of an order which would prohibit cross-hauling. This would limit the destinations to which a mill in North Carolina could forward goods. For example, a North Carolina mill on denims could not ship to a receiver in Kansas as competing manufacturers are located at points of less distance. A tax of 3% on freight charges (excepting coal) will be made effective Dec. 1.

Questions pertaining to time-and-a-half and double-time pay during Thanksgiving week was explained by Paul Halstead, secretary of Cotton-Textile Institute. Mr. Halstead suggested that any member in doubt as to how to handle time for the 6-day week should write to the Labor Department in Washington. Chairmen presenting reports were: taxation, R. D. Hall of Belmont; safety contest, Marion W. Heiss of Greensboro; membership, C. C. Dawson of Cramerton; traffic, F. J. Haywood of Concord; cotton, C. A. Cannon of Kannapolis; legislative, Herman Cone of Greensboro; finance, Harry W. Moore of Concord; and resolutions, Karl Bishopric, of Spray.

ELLISON A. SMYTH III of Balfour Mills, was elected president, and the retiring president, W. H. Ruffin, of Erwin Cotton Mills, Greensboro, was presented a medal. R. A. Spaugh, Jr. of Washington Mills, Winston-Salem, was elected first vice-president, and J. A. Moore, of Edenton Cotton Mills, Edenton, second vice-president. New member of the board of governors is Karl Bishopric, Spray Cotton Mills. Other board members elected were Britt Armfield of Burlington Mills; H. K. Hallett, Kendall Mills, Paw Creek; Marion W. Heiss, Revolution Cotton Mills, Greensboro; J. A. Cooper, Henderson Cotton Mills; Edwin Morgan, Morgan Cotton Mills, Laurel Hill; and C. C. Dawson, Cramerton Mills.

Special guests included Herman Cone, president, and William M. McLaurine, secretary, of the American Cotton Manufacturers Association and J. Craig Smith, president of the Alabama Cotton Manufacturers Association.

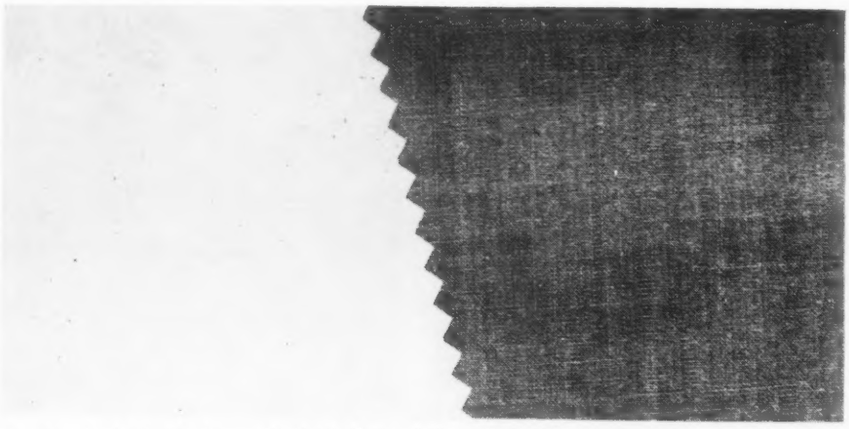
Fabrics For Military Purposes

Coated HH balloon cloth; cotton drill and sheeting specification amended

BALLOON CLOTH. white and O. D. reversible, synthetic resin coated cloth, used in the manufacture of mountain tents for the Army, is covered in Tentative Specification P. Q. D. No. 257. Base fabric shall be a desized Type HH balloon cloth printed on one side.

Coating compounds shall be of suitable polymerized or copolymerized vinyl resins plasticized and pigmented with titanium oxide to give a white finish. The compounds shall be non-toxic and non-irritant, and shall be applied to the unprinted side of the fabric. The coating compound shall have good adhesion to the fabric and shall not strike through to the printed side of the fabric or affect the appearance of the printed side. Coating compounds shall be flexible, free of tackiness; resistant to abrasion or scratching; shall not tender the fabric. The coated fabric shall be clean, well coated, and free from pin holes and blemishes or any other defect that can affect the fabric appearance or serviceability. Coated fabric shall meet the following requirements: Fabric coating shall weigh 2 oz. per sq. yd. maximum. Breaking strength minimum by 1x1x3 grab method, shall be 45 lb. warp and 45 lb. filling. Adhesion test shall be 5 lb. minimum pull of separation of coating from fabric. Tearing strength scale reading minimum on an Elmendorf testing machine shall be 40 warp and 30 filling. Hydrostatic pressure test 5 lb. minimum. Heat test: no adhesion at softening point (180° F.). Cold test: coating shall not crack or flake at 40° F. Tests required in P. Q. D. No. 257 are: hydrostatic test, heat test, volatile plasticizer test, resistance to low temperatures test, water spray test, tearing test, and tests for weather, ageing, adhesion, water leaching, and spray rating.

Desized HH balloon cloth shall be printed on one side with a shade of olive drab, No. 3, to match an approved sample, using vat dyes which show a good fastness on a 30-day exposure to weather. The fabric on the uncoated side shall be given a water-repellent finish with suitable salts and waxes or other approved methods to meet the minimum requirements of 10 days exposure to weather in accordance with Federal Specification CCC-T-191a, or the 30-hr. accelerated weathering test described in Tentative Specification P. Q. D. No. 257. The compound used shall be substantially free from sulphates and chlorides, and shall not alter the color of the fabric. Test methods shall conform to Federal Specification CCC-T-191a wherever applicable. Yarns shall be carded and combed. Weave shall be plain. Cloth shall weigh 2.05 oz. per sq.yd. Width shall be 41½ in. to 42½ in. Threads per inch shall be 120x120 minimum. Breaking strength minimum by 1x1x3 grab method, shall be 40 lb. warp and 40 lb. filling. [Although not stated in the specification the following gray construction is approximately correct to produce the required fabric: 44 in. 116 x 128, 5.90 yds. per lb., 80s warp and 90s filling.]



1. Coated HH balloon cloth (left is white coated face; right is printed O.D.)

COTTON DRILL. 7.5 oz. per sq. yd. unbleached, fully shrunk, in 28 to 72 in. widths for Army purposes, is requested in large quantities in a recent invitation for bids. Fabric shall conform to U. S. Army Specification 6-247A, with Amendment No. 1. Yarns shall be of thoroughly cleaned cotton free from waste. Grade shall be firsts: weave shall be a 3-harness twill, 2 up, 1 down —or herringbone twill. Finished cloth shall be clean, evenly woven, and free from defects which may affect serviceability or appearance. Sizing, finishing, and other non-fibrous materials shall not exceed 8%. Fabric shall be preshrunk; shrinkage shall not be more than 1% in warp and 1% in filling. Test methods shall conform to Federal Specification CCC-T-191a wherever applicable.

Type I. drill shall weigh 7.50 oz. per sq. yd. minimum. Width shall be from 28 to 72 in. Ends per inch shall be 74 x 60 minimum. Breaking strength minimum by 1x1x3 grab method, shall be 120 lb. warp and 85 lb. filling. [Although not given in the specification the following gray construction is approximately correct to produce the required fabric; 38 in. 72 x 60, 1.97 yd. per lb., 13¼s warp and 14s filling. To finish 36 in.]

Type II. drill shall weigh 7.5 oz. per sq. yd. Width from 28 to 72 in. Ends per inch shall be 74 x 48 minimum. Breaking strength, minimum by 1x1x3 grab method, shall be 120 lb. warp and 77 lb. filling. [Although not given in the specification the following gray construction is approximately correct to produce the required fabric: 38 in. 72 x 50, 1.97 yd. per lb., 13¼s warp and 11½s filling. To finish 36 in.]

Alternate fabric for drills specified in the invitation for bids shall be an unbleached cotton sheeting. The fabric shall be singed desized, and fully shrunk. Minimum weight shall be 5.5 oz. per sq. yd. Width shall be 36 in. minimum. Threads per inch shall be 52 x 46 minimum. Breaking strength, minimum by 1x1x3 grab method, shall be 55 lb. warp and 60 lb. filling. Gray fabric shall be standard 48x48, 2.50 yd. per lb. sheeting. [Although not stated in the specification, approximate yarn sizes and width are: 13s warp, and 13s filling, width 40 inches.]

Men's Wear Fabrics for 1943

Carryover stops suiting development; limited outlet for blended civilian cloth

By HAROLD E. REED
Assistant Editor

MARKET CAUTIOUS—100% virgin wool suiting fabrics available—summarizes the men's suiting field for 1943.

Under present conditions many woolen and worsted manufacturers are working on, or are completing, Government contracts. Commitments on future Army and Navy buying have not been made. With Government contracts priorities are available, on civilian orders equipment replacements are practically impossible to obtain. Limited amounts of wool are allotted for civilian purposes despite the fact that we have on hand a large stockpile of wool.

Mills are reluctant in making civilian commitments because of unpredictable conditions and the eventual possibility of forced liquidation because of lack of repair parts and diminishing supply of labor if the war continues for a number of years. Not a cheerful prospect!

A large stockpile of cloth for men's suiting exists and will meet existing demands well into the fall season. Little civilian activity in the field of tropicals will be found because large supplies of this fabric exist and the demand for tropical suits is limited.

Allotments of wool for civilian purposes probably will not be used extensively for blends until next season, when the present stockpile of all-wool fabrics has been exhausted. Most mills have conducted experimental work with blends, but have been reluctant to enter the market with 100% wool fabrics available. However, next season will mark the entrance of blends into the men's suiting field with 50/50 blends being popular. 50% wool, 50% rayon.

Fabric development is at a standstill. Successful patterns will be carried over. Blues of dark and medium shades and browns will be popular. Grays will be rather weak. In the woolen field cassimeres, cheviots, and shetlands will still maintain popularity.

Boys' suiting fabrics and pants fabrics are today classed as blended fabrics. These fabrics are now using about 45% rayon, 25% reused wool and 30% new wool. Very little can be expected in the line of fabric development in these fabrics for next season. The general trend is to carry the same designs with only the patterns smaller, neater and sharper. Fiber manipulation will be extended with the average blend running about 40% rayon, 45% reused wool and 15% new wool.

Manufacturers looking for civilian trade should investigate the field of pants fabrics and women's slack fabrics. The pants-fabric field is well populated, with most of the manufacturing being conducted in the South. A mill must depend on fiber manipulation in this field, and wool is not considered a necessity, as some of these fabrics are now being made of cotton and rayon blends and of 100% staple rayon. War workers are demanding work pants, and extensive demands have been felt for these fabrics for use in odd pants and in boys' and students' clothing.

Women's slacks fabrics offer mills looking for a new outlet in the civilian field an excellent opportunity for development work in wool and rayon blends. Some fabrics from the men's suiting field have been used in slack manufacture, but on the whole, this is an entirely new field.

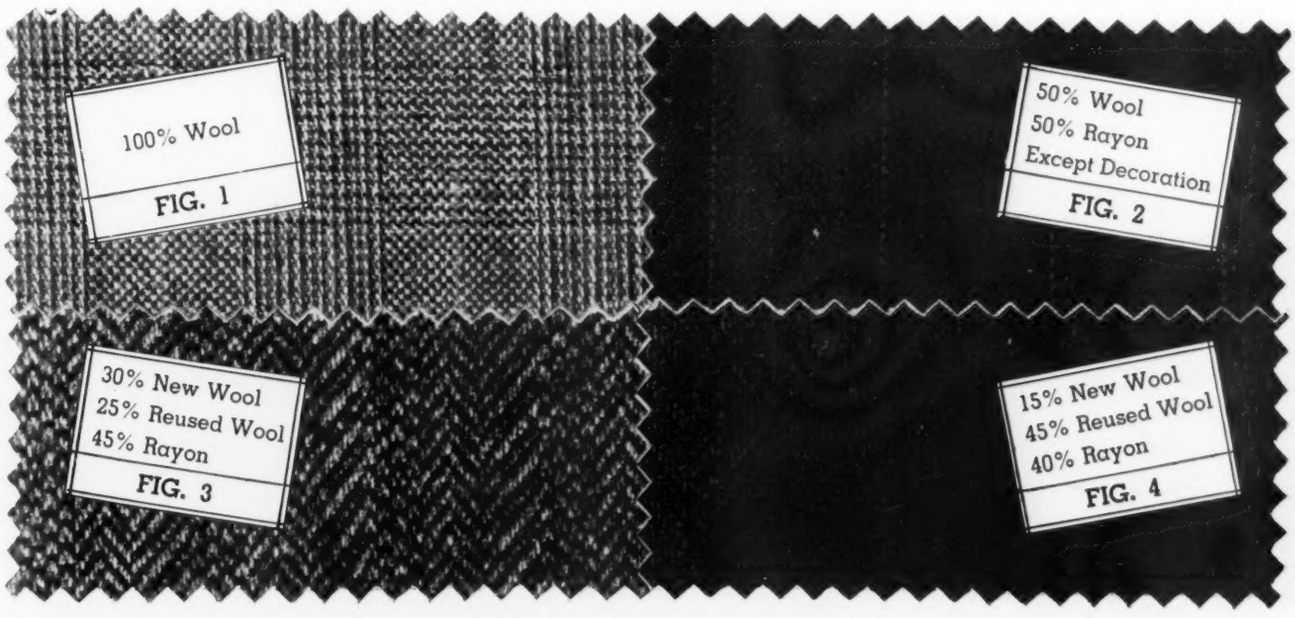


Fig. 1 A 12-to 12½-oz. all-worsted, mill finish fabric illustrates the type that will be popular throughout 1943.

Fig. 2 Blended worsted, 12-oz., representative of the fabric that will replace all-worsted suiting. This fabric is a 50/50 blend.

Fig. 3 A 13-oz. blended cassimere fabric finds extensive use in student's clothing and in the better-quality pants.

Fig. 4 Blended cassimere, 13-oz. This type of fabric probably will replace the cloth shown in Fig. 3 next season for student's clothing.

Photos by James Huntington, Greenville

Quaker Meadows Mills—the newest complete cotton spinning mill in the United States.

Large-Package Twisting

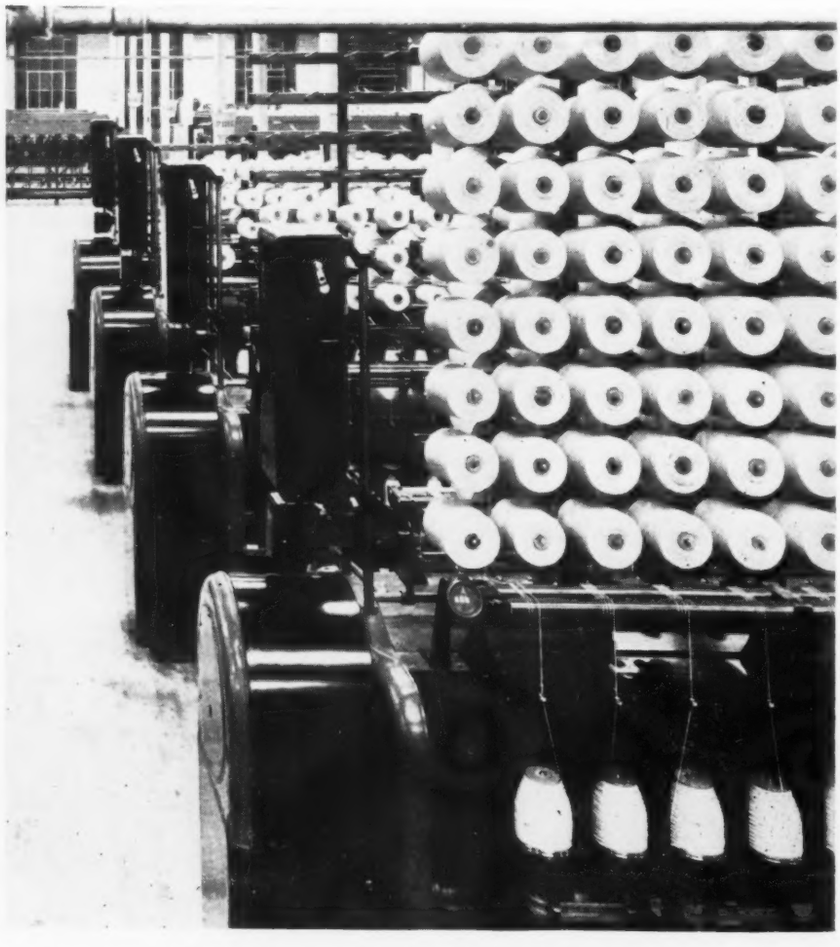
At Quaker Meadows is notable example of methods used in newest cotton mill

THE NEWEST complete cotton spinning mill in the United States—Quaker Meadows Mills, Inc., Hildebran, N. C. —was planned after careful consideration of present conditions and post-war possibilities. Designed to produce coarse yarns and twine, the plant is equipped throughout with the most modern equipment. Noteworthy among that equipment is an installation of large-package twisters, producing knotless packages holding up to 2½ lb. of yarn.

The twisters themselves, which embody several advanced features, are Saco-Lowell, Model 4, extra-heavy-duty, large-package twisters, 120 spindles to a frame, 7-in. gage, with 5½-in. horizontal rings. Twelve frames have been installed to handle the production of 20 Saco-Lowell Model 8, large-package spinning frames with 280 spindles each. The twisters produce twine and mop yarns in a variety of sizes and plies ranging from 4/2 to 8/8. For producing heavier plies than are economical on conventional cotton twisters, four Model M and eight Model D Brownell twisters have been ordered.

Layout for the Model 4 twisters is in four lines of three twisters each, with main alleys and cross alleys 4 ft. wide. Frames are driven by Allis-Chalmers with Vari-Pitch drive. Location of the motors under the foot-end of the frames gives more clearance for cross alleys. Sheet metal housing pro-

(*Continued on page* 84)



Twisters at Quaker Meadows produce knotless packages holding up to 2½ lb. of yarn.

Now Saran and Velon for Textiles

Properties and uses of synthetic yarns derived from vinylidene chloride resin

SARAN first came to the attention of the textile industry a little over two years ago, when it began to be employed in the form of a continuous ribbon, resembling rattan, for weaving car-seat coverings. Saran also appeared in the form of coarse mono-filaments, yarns, or cords which were used in the manufacture of fishing leaders, trolling lines, tennis-racket strings, etc. Now Saran in the form of a mono-filament yarn, known as Velon, is being employed for weaving a variety of fabrics for military, industrial, household, and other uses.

Saran is a thermoplastic synthetic resin of the vinylidene chloride type, produced from oil and salt by Dow Chemical Co. The extrusion method for producing the ribbon-like or rattan-like synthetics was worked out by Irvington Varnish & Insulator Co. The process for extruding the mono-filament yarn known as Velon was developed by Firestone Tire & Rubber Co. A great deal of the development work on production of woven fabrics from Velon was carried out by Hafner Associates.

Outstanding properties of Saran or Velon synthetic yarns include high resistance to moisture, alkalis, acids, fungi, and many solvents; high tensile strength; and great flexural durability. Data on these and other properties are given in the accompanying table. The properties can be altered to a considerable degree by a process of controlled stretching and heat to orient the molecules. Heat treatment during and after stretching affects the degree of crystallization and thus controls the properties of Saran from a soft, flexible material with a low softening point to a tough, hard material having a high softening point. Orientation imparts high tensile strength, great flexibility, long fatigue life, and good elasticity—which are particularly desirable in mono-filaments where load is along the longitudinal axis. A range of formulations and orientation processes permit the production of Saran with properties to meet special applications.

Properties of Saran or Velon mono-filament yarn

Tensile strength (ultimate)	15,000 to 40,000 lb. per sq. in.
Elongation at yield point	20 to 30%
Flexural strength	Flexible
Resistance to heat (continuous)	170°F.
Resistance to heat (intermittent)	Shrinks above 170°F.
Softening point	240 to 280°F.
Water absorption	Less than 0.1%
Burning rate	Self extinguishing
Effect of age	None
Effect of sunlight	Darkens slightly
Effect of acids, alkalis, solvents	None to slight
Clarity	Translucent to opaque

Saran oriented monofilaments retain more than 50% of their room-temperature strength at 212°F., but unless restrained will shrink at temperatures above 170°F.

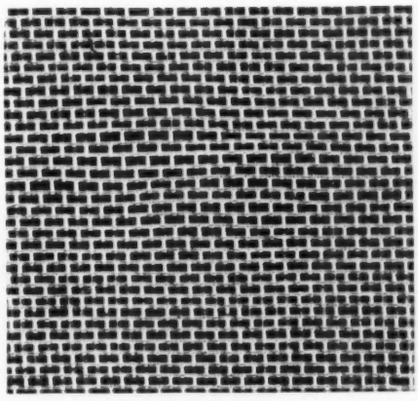


Fig. 2. Velon screen cloth woven by Hafner Associates.

VELON MONO-FILAMENTS are available at present in sizes ranging from 0.008

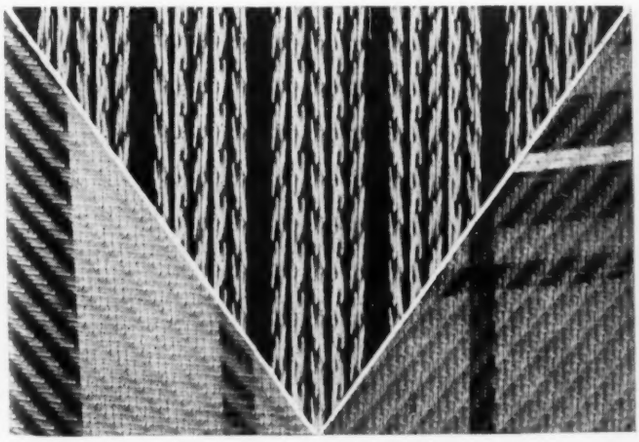


Fig. 3. Group of Velon seat cover fabrics.

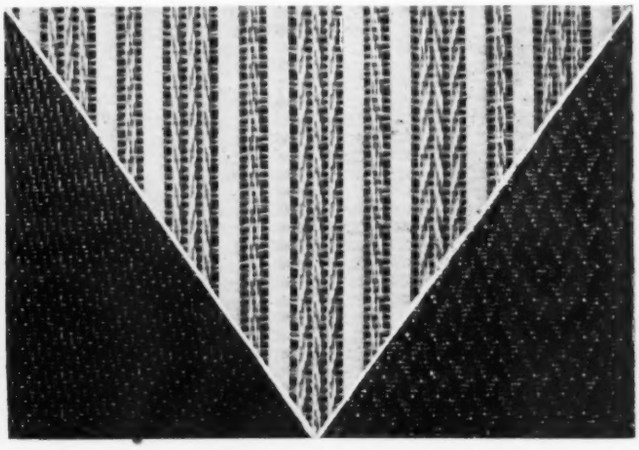
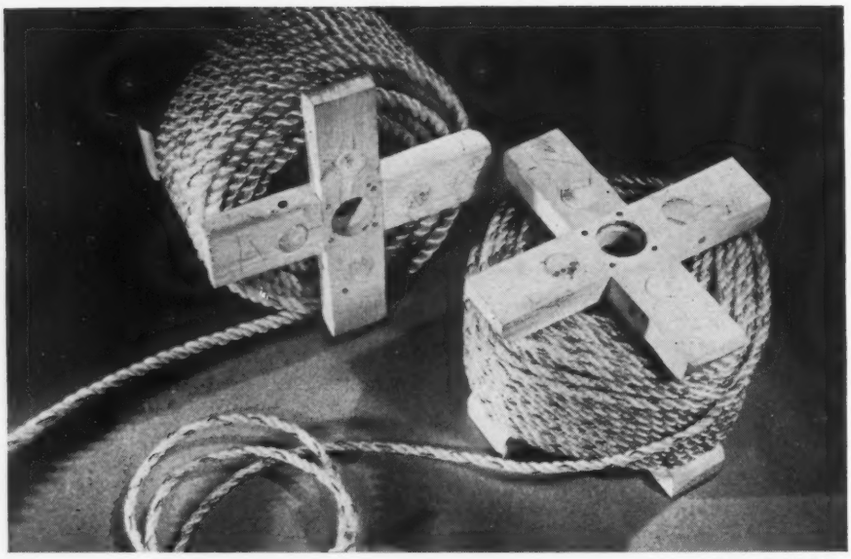


Fig. 4. Velon handbag and shoe fabrics.



Dow Chemical Co.

Fig. 1. Rope made from Saran is characterized by high strength.

to 0.075 in. in diameter, and in a wide range of colors. These mono-filaments can be woven, knit, or braided on conventional types of textile machinery with only minor adjustments.

Some of the textile products which have been made from Saran include seat covers, upholstery, shoe tops, belts, suspenders, handbags, filter cloth, ropes, laundry nets, and window screens. A feature of fabrics made from Saran is that they do not require laundering or dry-cleaning, but are easily cleaned with a damp cloth or a soft brush. Rope made from Saran is illustrated in Fig. 1. Such rope is characterized by high strength (both dry and wet), and resistance to chemicals and fungi. Saran has proved suitable also as a core for wire ropes.

A Velon mesh fabric woven by Hafner Associates for use as screen cloth is illustrated in Fig. 2. This mesh fabric is resistant to smoke, moisture, acids, rust, and corrosion, and is believed to be superior to iron or copper mesh screening for many industrial and tropical areas. Samples have been submitted to the Army, Navy, and Marine Corps for tests.

A group of Velon seat covers and upholstery fabrics woven by Hafner Associates is shown in Fig. 3, and a group of fabrics for shoes and handbags made by the same company is illustrated in Fig. 4. In one of the latter groups of fabrics a rattan-like filament has been introduced in the warp.

At present use of Saran or Velon for civilian fabrics is limited, as it is needed for a number of military and essential industrial purposes. It is believed, however, that when larger quantities are available, this new synthetic will find application in a wide range of textiles where high strength, durability, and other properties of this type of yarn are desirable.

Large-Package Twisting

(*Continued from page* 82)

tects the sheaves and V-belts from damage by trucks. Speeds from 10 in. diameter cylinder run from 663 to 949 r.p.m. Ratio of whirl to cylinder is 3.16.

Lighting for the twisters consists of individual fluorescent lamps installed by the Miller Co. Lamps are spaced to give proper illumination on all sides of the frame. Incidentally, the same lamps are standard equipment throughout the entire mill. The spacing and lighting of the machines gives the operative plenty of space and light for creeling, doffing, and operating of the twisters for quality and production.

Pin type creels for wooden cores are used. Six frames have 8-tier creels and six have 4-tier creels, thus giving the frames a versatile range of plies. Singles yarn is spun on paper bobbins and wound on wooden cores. Two Foster Model 102, 100-spindle tube winders package the singles yarn production on wooden cores for the twister creels.

Bottom rolls are grooved to guide ends and to lap up ends broken. Two lines run the full length of the frame, and are used without top weighting rolls. Three wraps are taken in the grooves and around the two rolls in putting ends up. Delivery from the front rolls to the yarn guide is perpendicular, giving less drag on the yarn passing from roll to guide. Porcelain eye type yarn guides decrease drag still further, thus reducing break backs.

Bobbins, for partial taper-top build, are button-head fiber, for 5½-in. ring 8-in. traverse. The builder motion is the improved Type C-2 builder and builds a core similar in structure to the lay produced by the inverted Dwight wind and a cover whose lay resembles, in the main, the straight wind. This new wind has the advantages of the Dwight wind and almost all the capacity of the straight wind. Bobbins hold approximately 2½ lb. when full. They are put up directly on four Foster heavy-duty No. 40 and No. 77 cone and tube winders for large packages. Some tubes on special yarns run as high as 11 lb., which would give about four knots to the package.

Spindles are high duty, No. 5, ball bearing, with 3-in. whirl, and are driven from a high cylinder at from approximately 2,000 to 3,000 r.p.m. The cylinder and idlers are inclosed front and back with sheet metal housing to keep out fly. Knee brakes are provided for individual spindles. Direction of twist may be changed, without changing the tapes, by changing the twist gear and direction of rotation of the motor.

Ring-rail construction is new in that slots have been provided in the rail to pass stationary separators through and allow free traverse. This arrangement prevents ends from flying over to the next bobbin. Ring rail has a spring and cam counterbalance system that takes the place of the usual weights and cams. This insures positive, quick action by the ring rail and thus prevents improper winds. Steel travelers on steel rings (Vitritex solid flange type) are used with this installation. Travelers used are Wentworth double-duty American, Style 600, flange 7, made by National Ring Traveler Co.

B. B. Blackwelder, president of Quaker Mills, and F. P. Bodenheimer, superintendent, both are well pleased with the operation of the twisters. At present two operators creel, doff, and operate the twisters on each shift. Oiling is done by a fixer who also changes frames and fixes on the winders. A Bijur, one-shot lubricating system cuts oiling to a minimum. The twister rolls have open cast-iron bearings that are hand oiled. Two-shift production of 55,000 lb. per week has been gratifying, since the mill organization is in the process of development. Full operation on three 40-hr. shifts is designed to attain 100,000 lb. weekly production.

Yarn-Count Constants

Easily developed tables will simplify spinning-frame production calculations

By CLARENCE McELROY and MARCUS GROSS

OVERSEER'S DUTIES in the spinning department are many and varied. Any simplified schedule which enables him to determine rapidly his answers to production problems is of great assistance. Speed and accuracy are essential in all calculations, and every possible short-cut should be used. Wherever possible, constants should be used to facilitate production calculations. The accompanying table of yarn-count constants facilitates the calculation of production in pounds per spindle.

The value of the constants listed in the accompanying table bears an indirect relation to the yarn counts. When the constant is multiplied by the r.p.m. of the front roll for any given yarn count, the answer will be in pounds per spindle, 100% production for 40 hr.

For example: A spinning frame is running 20s yarn. In the column marked Yarn No. we find opposite 20 the constant 0.01245. The front roll speed is 140 r.p.m.; therefore, $140 \times .01245 = 1.743$ lb. per 1 spindle, 40 hr. 100% production. Now, assume there are 240 spindles per frame and the efficiency is 90%, the frame production for 40 hr. will be: $1.743 \times 240 \times 0.90 = 276$ lb.

The formula used to derive these constants is well-known. The authors used it as a basis in developing their constants, and any overseer can, by following the principles stated, revise it to suit his weekly operating time. The basic formula is as follows:

(r.p.m. of front roll $\times$ roll dia. $\times \pi \times$ min. per hr. $\times$ hr. run) $\div$ (yarn no. $\times$ in. per yd. $\times$ yd. per hank) = K. or constant.

Then, based on the assumption that the front-roll diameter is 1 in., we substitute 1 for the r.p.m. of the front roll, 1 for the roll diameter and 1 for the yarn number to obtain the constant.

$[1 \times 1 \times 3.14 \times 60$ min. $\times$ 40 hr.$] \div$
$[1 \times 36$ in. $\times$ 840 yd. (1 hank)$] = 0.249$

It is interesting to note that the above constant for No. 1 yarn is also a basic hank constant. Therefore, 0.249 multiplied by the front-roll speed of any given yarn count will equal hanks per spindle, 40 hr., 100% production. This should be of interest where rates are promulgated in anticipation of possible hanks to be produced. The division of 0.249 by 2 will equal 0.1245, the yarn constant for a 2s yarn. The constants given in the table were found by dividing each count into 0.249.

The spinning department overseer will find such a chart invaluable in computing his frame production when assigning his layout. This can also be applied to those branches of the textile field where yarns per hank and the front roll diameter varies. By substituting some value other than 840 yd. (1 hank) and the diameter of the front roll in the basic formula, one can derive a new basic constant. The procedure of formulating a chart to meet the conditions in an individual mill would be the same as has been explained above.

Constants for calculating spinning frame production — Basis: 40 hr.; 1 in. front-roll diameter.

Yarn No.	*Constant*	*Yarn No.*	*Constant*	*Yarn No.*	*Constant*	*Yarn No.*	*Constant*	*Yarn No.*	*Constant*
1	.249000	21	.011857	41	.006073	61	.004082	81	.003074
2	.124500	22	.011318	42	.005929	62	.004016	82	.003037
3	.083000	23	.010826	43	.005791	63	.003952	83	.003000
4	.062250	24	.010375	44	.005659	64	.003891	84	.002964
5	.049800	25	.009960	45	.005533	65	.003831	85	.002929
6	.041500	26	.009577	46	.005413	66	.003773	86	.002895
7	.035571	27	.009222	47	.005298	67	.003716	87	.002862
8	.031125	28	.008893	48	.005187	68	.003662	88	.002830
9	.027666	29	.008586	49	.005082	69	.003609	89	.002798
10	.024900	30	.008300	50	.004980	70	.003557	90	.002767
11	.022636	31	.008032	51	.004882	71	.003507	91	.002736
12	.020750	32	.007781	52	.004788	72	.003458	92	.002706
13	.019154	33	.007545	53	.004698	73	.003411	93	.002677
14	.017786	34	.007324	54	.004611	74	.003365	94	.002649
15	.016600	35	.007114	55	.004527	75	.003320	95	.002621
16	.015562	36	.006917	56	.004446	76	.003276	96	.002594
17	.014647	37	.006730	57	.004368	77	.003234	97	.002567
18	.013833	38	.006553	58	.004293	78	.003192	98	.002541
19	.013105	39	.006385	59	.004220	79	.003152	99	.002515
20	.012450	40	.006225	60	.004150	80	.003112	100	.002490

The Life Story of a Textile Worker

A very human document of a girl's career in England, Canada, and U. S.

Editor's Note: **An industry is built around men—not around machinery and materials. And men—particularly in the case of the textile industry—mean men and women. That's why this very human document which we are printing below symbolizes to us the human phase—the only real phase—of textile manufacture. It is the story of Elizabeth Tooley, a mill-worker successively in England, Canada, and the United States. It came to us because of a story written by Henry G. Lord, founder of TEXTILE WORLD, on his page in a recent issue. Mr. Lord explains that connection on his page this month. But here we give the life-story of Mrs. Tooley, as she wrote it to us. We have edited it a bit, since she admitted that she is "not much at hand writing." But the story is hers: the story of a courageous woman who today, in her late forties, is "taking the place of the boys who have gone out to fight for us." Packed into a compact 4 ft. 8 in. and 85 lb. is a dynamic personality which throbs in every line of her life-story. She is to us a symbol of the men and women who have made the textile industry not only one of the greatest, but very definitely the most human, of all industries.**

By ELIZABETH TOOLEY

COHOES, N. Y.

I WAS BORN in Oldham, Lancashire, England, on a small place, only six houses in a row. I was born on May 29, 1893. My father was born in Yorkshire, England, and my mother was born in Bolton, Lancashire, England. Now I come from a textile family and my father was a mule spinner and mother a speeder tender. Both were employed in Crosses-Wink Worth Mill in Bolton. I must say to you, Sir, when you come from Crosses-Wink Worth Mill you can travel anywhere around the world.

My father's name was John Tomas Tottleby. He came out to the United States soon after I was born, but what part he came to my mother did not know, as she got his letters from the Spinners Club where he belonged.

Later she moved to a town called Great Harwood, also in Lancashire. Well, here is where I come in. After we got to Great Harwood, my mother moved to a little village called Hyndburnbridge, Clayton Lee Moors, near Accrington in Lancashire. She moved down there because rent was cheap—25¢ a week, 1 shilling in English money. So off to school she sent me to St. Mary's in Clayton Lee Moors. It was one mile to the school, and four times a day I went back and home, then made supper ready for mother when she came home from the mill. She worked for the John Thompson Butts Mill.

When in school I was not very bright. Those days they did not bother about school. I was nine years when I started to go to school, and I only got to the fourth grade and then I was 13 years old and mother got my papers to go to work for half of each day. She took me to her brother-in-law, a family of 14, all weavers, and she asked my uncle to teach me how to weave. Well off to the mill I went to learn how to weave. Everything was buzzy-buzzy in my ears all day long.

My uncle had four looms with picker-stick at the top of the loom—old-time looms; their name was Henry Lives looms. I believe they were made in Blackburn, in Lancashire.

Well after a week in the mill I was on my own two looms, and I was so small they had to make me something to stand on. I tried to do the best I could, but I don't know—I did not like to weave. I wanted to be a dressmaker or a milliner or a designer of dresses. Well one day I don't know what I did, but I must have done something wrong because I know mother told me that I had to run those looms or the looms would run me. So I must say to you, Sir, how I came to wake up. One boy got three looms ahead of me although I was ahead of him in the mill. Well into the office I went and asked for the super. He listened to me standing there, to what I had to say, and it seems his father was the head of the union of that mill. Well after a lot of chewing he gave me three looms and made the boy and me work together in one alley. And was I glad to get the best of that super! I knew I had to make up my mind to run those looms and I am pleased to say I always got my way O. K.

THEN ONE NIGHT when mother and I got home, there was a large letter waiting for her. It was from Valleyfield, Quebec, Canada. After supper mother and I read the letter asking us to come across and work for the Montreal Cottons, Ltd. She wrote back telling them she would come out if they would send passes on to her. One month later two passes came for mother and me so Monday when I got to the mill where I worked and the super told me to go on four looms, which meant you were a crackerjack weaver, I told him I was sorry I could not take the four looms. This is what he said: "What the hell's the matter, Lizzie, don't you like to work here?" I said: "Yes, but mother and I are leaving the country." Well he wanted to know all about it so I up and told him. He said: "Lizzie, if you don't like it in Canada come back to me and your job will be ready at all times."

Well, Sir, we got to Canada Dec. 6, 1913. After a week's rest, into the weave shop I went. The first thing I knew I was on four Crompton & Knowles stop-motion five-harness sateen looms. The first week I was all balled up, but I got the best of them. Every time a loom banged off, I would run out of the alley telling the loomfixer that the loom was broken. He got a great kick out of this. I worked there until they changed the old looms to new looms—Stafford looms—nine shuttles to the loom. They gave me eight looms to run. I had all kinds of warps, sometimes three beams in the looms with small dobby heads. We had to clean our looms every two weeks and draw our own smashes in, and be our own boss on everything we did. We only got paid every two weeks in Valleyfield: I got $24 to $25 every two weeks.

Then in 1918 mother got a letter from her sister in the United States asking her to come out to her as her boys had gone to fight. We went and the super of the mills in Valleyfield was sorry to hear of us leaving. He also told us if we did not like the work in the States we could go back to Canada.

The first place we came to in the United States was Nashua, N. H. After a week's rest we went to work. Now

Mrs. Tooley on the job at Beaunit Mills in Cohoes.

I could not go weaving in the Nashua Mill because I was too small, so the boss put me in the spinning room. They put me with a girl the first day, and the second day I was on one frame, and after two weeks I was on two frames. But I did not like spinning, so I told mother I was going to try something else, so she made up her mind to better herself as the speeders they put her on were no good. So we gave notice.

We came down to a small place called Readville, Mass. It was the Readville Mill. I got what I wanted, and mother did too. This is where Mr. Lord's page in TEXTILE WORLD comes in. (For this connection, see page 6 of this issue. —*Editor.*) A Jap asked the super if he would get mother and me to go out to Japan and teach the Japanese girls how to do our work, but mother thought we had gone far enough.

SO WE WENT to Woonsocket, R. I., to the Globe Mill. We were going to start work the following week. But somehow or other Tom Armstrong of the Griswoldville Mill, Griswoldville, Mass., got to know about us and asked us to go to work for him. Now I must say to you, Sir, that I saw my first Draper looms there, but the looms I was on were made of wood; only the wheels were made of cast iron. I got a good kick out of those looms but I made my $28 a week from eight looms, so you see I was going up and up all the while.

Then Frank Deno who was a weaver next to me and was working on 24 Draper Looms, asked me to marry him, and I did. After a year my baby was born but she lived only nine days.

After my mother went back to work, they had made her speeders longer and she could not make money enough on them. She knew what they had done to her speeders as she is an old hand in textiles. So she told my husband and me that she was going back East. She was gone about two months and then sent a truck for her household goods. I came back with them to Providence, R. I., on Valley Street, around Olneyville Square. But when I got time to go around Providence, things were bad. I went to B. B. & R. Knight's on Eddy Street, but nothing doing.

So my husband brought mother and me to Cohoes, N. Y., to work in the Harmony Mills. After nine years he died on me, so I went back to work in the drawing room on all kinds of drawing-in. We had three beams on the looms—all Draper looms. I got $5.00 for each warp I drew in. Then when they were short-handed in the weave shop the boss asked me to help him out, and I did.

After a while I thought I would go into business for myself so I moved into a large flat, got roomers and boarders, and did well for a while. Then the depression came and the boarders and roomers left me, so I went back to the mill and got a job picking out on the looms for the weavers at $21.40 a week standing pay. I was there until the Harmony Mills sold out, and what a time I had getting work. My money went down and down till I had to go on home relief, and for three years I was on that thing.

NOW IT HAPPENED that when Mrs. Tooley died her husband asked mother and me to move in with him as he had boarders and roomers, so we moved in with him. After a while mother got work in Adams, Mass., at the Berkshire Mills, but I stayed on and helped Mr. Tooley out the best way I could. Four years after his wife's death, he asked me to marry him and I said I would like to get some work. I said: "Let's move into a bigger place." We did so. Well one day the landlady of the place told me she could not do anything with my relief checks as they were **no good** and I told her it was not my fault as the City Hall had given them to me for my room rent. "Well," she said, "you always worked in a cotton mill." I said: "Yes, Cohoes put me out of work and I am going to see to it that they put me back to work." "O. K.," she said, "go to the Beaunit Mills and tell them I sent you there and ask for Mr. Fisher." So I did and he gave me a job as a drop-wire girl. So now here is where I come in. I am the head one in the drop-wire department and I teach all the boys and girls, also women, how to drop wires. I have had as many as 40 boys and girls to teach. Some of the boys are on the other side fighting for me, and I am happy to think I had them one time in my care. Some of the girls are now weaving and some are in the cloth room. I come in from 1:30 to 10 p.m. on the second shift. Then I have to see to everything beside my own work as my boss depends on me getting the work out. And that is why I said I am the head over that department. Sometimes the spare fixer gets the work all balled up and I have to go and get it straightened out for my boss.

Now you may be surprised at how I got your TEXTILE WORLD. I was going through the weave shop and I came across one of your TEXTILE WORLD's and I was happy to read it. I spoke to the second hand about it and he said: "Well you can write to them and I wish you luck—and I will write too for the TEXTILE WORLD as I kind of like what it says." I am very happy to have that copy of TEXTILE WORLD in my home. It means so much to me.

I would have written before now but I went to high school all last winter learning how to sew and run power machines. I went from 8:30 to 11:30 a.m., four mornings a week. I graduated the 5th of March and was I happy to have that piece of paper in my hands! How the sun shines on me! This year my teacher wanted me to go back and take a course on other power machines, but I have signed up for Red Cross First Aid and I would like to go as a Nurse's Aide.

Only last week I asked the head boss to let me learn how to be a lease tender, going around with the spare fixer as we are getting short of help, all the boys having gone off to fight for us, and someone has to take their place till they come home. I am going along pretty well at being a lease tender with the spare fixer. If I keep on maybe I will be boss weaver some day, which I would like to be, but my height goes against me as I am only 4 ft., 8 in. and my weight is 95 lb.

I hope you enjoy my letter and that you can make it out O. K.; I am not much at hand-writing.

Table 1.
Woven fabric defects traced to quilling.

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	Traverse wheel	Bunch formation	Cop formation	Traverse bar bent	Guides	Tension	Loose waste	Operators	Over tinting	Knots on taper	Steaming	Rough bunch guide	Package too large	Humidity	Poor tints	Damaged quills
Bands						■					■		■	■		■
Broken picks	■	■	■	■	■	■			■	■		■	■			■
Filling lumps			■			■	■				■			■		
Filling mixed								■							■	
Filling splits	■	■			■					■		■	■			■
Filling strips	■	■			■	■				■		■	■			■
Picks, tight		■				■				■			■			■
Picks, loose		■	■			■				■	■		■			
Shiners	■					■			■		■		■			■

Table 2.
Woven fabric defects traced to warping.

Copyright 1942 by S. C. Veney

	Creeling	Reed, rough, off center	Tension, warping	Tension, beaming	Stop motion	Operator	Creel off center	Section spacing	Yarn mixtures	Condition of bobbins	Crossed ends	Redrawn yarn	Sudden stops	Lease rods, placed improperly	Waste in reed	Wrong reed	Cut dents or guides
Ends, tight	■	■	■		■					■	■	■			■		■
Ends, loose	■		■		■					■	■	■					
Knots soiled	■				■	■											
Rolled warp			■	■				■					■	■		■	
Streaks		■	■	■	■		■	■	■	■		■			■	■	
Strip-backs		■	■	■	■		■		■		■		■		■	■	■

Table 3.
Woven fabric defects traced to slashing.

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	Formula	Cylinder covers	Cylinder temperature high	Cylinder temperature low	Solution temperature high	Solution temperature low	Quetsch pressure high	Quetsch pressure low	Stretch high	Stretch low	Speed high	Speed low	Section beam tension	Stops	Breaker rods	Quetsch rolls out of line	Beaming
Ends, broken		■							■				■			■	
Rolled warp		■								■		■	■		■		■
Shuttle marks	■																
Split ends		■					■		■						■	■	
Streaks	■	■		■		■		■	■	■	■		■		■	■	■
Size spots						■		■						■	■		■
Tear drops	■			■		■		■		■		■		■		■	
Tender yarn		■	■		■		■		■		■	■		■	■	■	

Fabric Defects Charted

To save time in determining cause of faults in weaving and in processing

By S. C. VENEY

SUPERINTENDENTS, OVERSEERS OF WEAVING, AND LOOMFIXERS will find the accompanying charts showing the causes and the sources of many defects occurring in rayon fabrics great time-savers. Listed in simplified form are the defects most frequently encountered and the source of the defects or the operation in which the defects originated. Charts have been prepared tracing many of the defects back to the warping, slashing, and the quilling processes. The chart devoted to defects that occur at the loom is so compiled as to indicate the most frequent source of those defects.

Sometimes a fixer is at a loss as to the cause of a certain cloth defect. By referring to the charts and finding listed a large number of causes, he can obtain a clue as to how he fixed a like defect before. These charts will prove helpful also to learners and inexperienced help by enabling them to locate the source of trouble with a minimum loss of time. Although the charts refer specifically to rayon fabrics, they will prove useful in plants weaving other types of fabrics as many of the defects listed are not confined to rayon piece goods.

Table 4.

Sources of frequent cloth defects.

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	Edge tension	Uneven shuttle sizes	Design	Harness time	Let-off motion	Take-up motion	Head motion	Warp tenion	Lay	Brake	Drive	Reed	Shuttle tension	Shuttle condition	Center fork	Shuttle check	Picking power	Lay covering	Clean shuttle boxes	Steaming (quills)	Ends from spools	Ends crossed	Stickers	Extra lap on beam	Heddles	Knots (filling)	Stop motion	Quill formation	Condition of quills	Cut shuttle pins	Cut shuttle rings	Cut shuttle porcelains	Cut feeler tips	Low shuttle spindles	High shuttle spindles	Picking, timing	Damaged yarn	Filling cutter	Shed formation	Bad shuttle fur	Yarn mixture	Weaver	Shuttle filler	Humidity	Slashing	Warping	Quilling	Throwing
Barré																																																		
Bands (filling)																																																		
Broken picks																																																	
Center loops																																																	
Cracks																																																
Drag-ins																																																
Ends, loose																																																
Ends, tight																																																
Ends, broken																																																
Ends, out																																																
Lumps, filling																																																
Flashes (soiling)																																																
Filling stripes																																																
Filling splits																																																
Filling mixed																																																
Floats																																																
Hard spots																																																
Knots, soiled																																																
Picks, tight																																																
Picks, loose																																																
Picks, missing																																																
Picks, hang																																																
Spread marks																																																
Starting marks																																																
Streaks, warp																																																
Shuttle marks																																																
Slack twist																																																
Shiners																																																
Soft spots																																																
Tear drops																																																
Tender yarn																																																
Warp stripes																																																

—Key— ■ Primary Source ■ Secondary Source

Identification of Fiber Damage

Causes of injury to wool fiber revealed by rapid chemical and microscopic tests

Before a recent meeting of the American Association of Textile Technologists the author presented a paper entitled "Microscopy of Textile Fibers." Mr. Krauss now has prepared this exclusive article for TEXTILE WORLD containing detailed information on the identification of wool fiber damage, especially damage caused during the preliminary processing operations in textile mills.

By WALTER KRAUSS
Technical Laboratories, Sears Roebuck & Co.

PROPER IDENTIFICATION of textile fiber damage and the determination of the cause will often prevent further loss caused by a destructive agent or will help in the proper adjustment of claims involving returned goods. Textile fibers are subject to damage at various stages from the natural raw fiber to the manufactured fabric. Damage is also caused through use and wear of a fabric. Damage occuring during the various stages of manufacturing can be checked by combined microscopic, physical, and chemical tests. Sufficient quantities of the fibrous materials are usually available and can be employed for physical and chemical tests. Thus, further damage can be prevented by corrective measures during processing.

Fig. 1. Physical damage to reprocessed wool is evident. Note that scale formation is lacking and the serated appearance of the fiber. (500x)

Damaged or defective items, returned to the manufacturer or the selling organization by its customers, usually have to be analyzed without further destruction of the item, and this presents an entirely different problem. This is especially true in cases involving court claims or adjustments. In such instances identification by the microscope is often the only means of determining the cause and degree of damage.

Identification of damage on fibers by means of the microscope requires a fundamental knowledge of the damage-causing agents to which each specific fiber group is susceptible and of the processes to which the fiber is subjected during manufacture or while it is in the hands of the customer. A great aid in analysis by means of the microscope is the use of a number of chemical reagents and stains, especially developed for such purposes.

Presence of holes or weak spots in a fabric makes it obvious that such defects are caused by some type of harmful agent. Close examination of the damaged parts by means of a microscope, with the aid of chemical reagents or stains, is the only means of making a positive identification of the cause of damage without further visibly damaging the items. Photomicrographs of the damage are often of value in litigation.

Chemical action of acid and alkali is a frequent cause of fiber and fabric damage, either during manufacturing or in customer use. Physical damage in manufacture is dependent upon the amount of handling the fibers receive and upon the severity of the manufacturing methods. Irregular natural fibers and defective man-made fibers also contribute their share to excessive fiber and yarn breakage in fabrics. Damage by the action of insects or mildew is more often found in incorrectly stored items than it is while the item is being manufactured or is in constant use.

Fig. 2. Worn wool fiber. This fiber was taken from a fabric containing reused wool. (500x)

WOOL DAMAGE. *Physical* — Abnormal fibers, showing pronounced variation in diameter, although seldom contributing to actual damage, are often found. Only in severe cases, where the fiber is reduced in places to less than half of its normal thickness, do breaks occur.

Manufacturing processes, such as carding or napping, are the cause of some physical damage which is especially noticeable in reprocessed and reused wools. In fact, the presence of a high amount of physically damaged fibers in a fabric is a definite indication that reprocessed or reused wool is present. A damaged, reused wool fiber is illustrated in Fig. 1. In this instance, the damage is physical and was caused by reprocessing. Fibers showing wear, Fig. 2, can, of course, be identified as being reused wool. Virgin wool yarns will contain a small percentage of dam-

aged fibers, usually less than 2%, as it is impossible to process wool into yarn without slight physical damage. However, fabrics containing reused wool naturally show a much higher percentage of damaged fibers, ranging to about 6.5% for a fabric of 100% reprocessed wool.

Probably the greatest damage to wool fiber is caused by the action of chemicals. Therefore, it is no wonder that the greatest number of tests for damage have been developed for this purpose. The high sensitivity of wool to chemicals, especially alkalis, causes the fibers to be attacked while still on the animal. The action of sunlight on wool, as investigated by vonBergen, is an indication of wool sensitivity. Again, lack of control during the scouring of wool is responsible for alkali damage, which often has a very characteristic appearance when viewed under the microscope, as shown in Fig. 3.

Similarly, a major portion of the chemically damaged woolen and worsted items returned by customers are usually identified as being alkali damaged. Careful washing cannot be emphasized too strongly in scouring and in processing wool. Although wool is fairly resistant to weak acids, strong sulphuric acid used in carbonizing or hydrochloric acid used in the stripping of dye, if not removed from the material within a short time will cause holes. The Krais-Viertel reaction, applied to the damaged area of fibers, is a good test for confirming chemical damage. General chemical damage can be checked qualitatively with the Allworden reaction as follows:

Water is saturated with chlorine and the fibers are mounted in this solution. Normal wool will show along the outside of each fiber transparent gas bubbles arranged in a pearl string-like manner, as shown in Fig. 4. Failure of this reaction to take place indicates chemical damage. Severe swelling of the fiber is usually a sign of damage through chlorination during processing.

The Krais-Viertel reaction is a test for acid damage on wool. A solution consisting of 20 gm. of sodium hydroxide dissolved in 50 ml. of ammonium hydroxide is made by cooling and shaking the solution constantly. Fibers are mounted in this reagent and the time required for the appearance of grainy bubbles along the fibers (Fig. 5) is an indication of the degree of acid damage as listed below.

0 to 2 min. Strong acid damage.

2 to 6 min. Acid damage

6 to 10 min. Fibers treated with acid but not damaged

8 to 12 min. Normal fibers

15 to 30 min. Possible alkali treatment or damage

Insects and Bacteria—Cloth damage that can be accomplished by the moth and the carpet beetle is well-known to every mill man, as well as to every housewife. The characteristic bite marks on the fibers make such identification positive. The action of bacteria on wool is illustrated in Fig. 6.

Silk damage. Similar in composition to wool, silk reacts to most chemicals in the same manner. Silk filaments are highly sensitive to alkali and less resistant to acids than wool. The fibers also show the least resistance to the action of light.

(A second article by Mr. Krauss will appear in an early issue of TEXTILE WORLD in which the author will discuss damage to cotton fibers—*Editor.*)

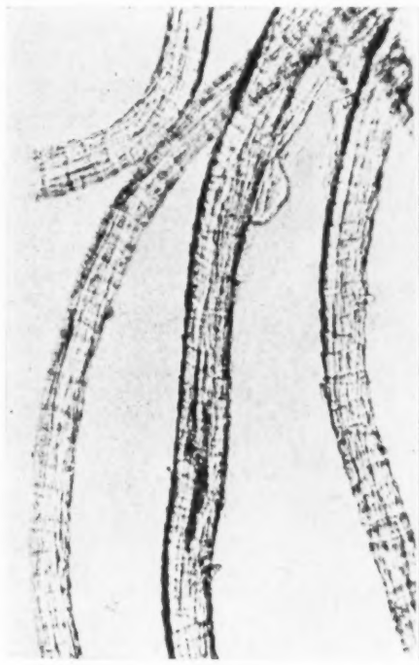


Fig. 3. Wool fibers show severe alkali damage. This damage is frequently traced to careless handling by the consumer. The scale formation of the fiber has been injured. (230x)

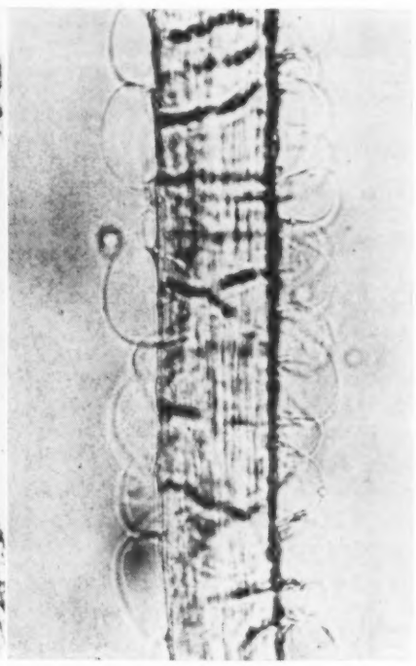


Fig. 4. Allworden reaction for chemically determining alkali damage to a wool fiber. Transparent bubbles indicate the degree of alkali damage. (500x)

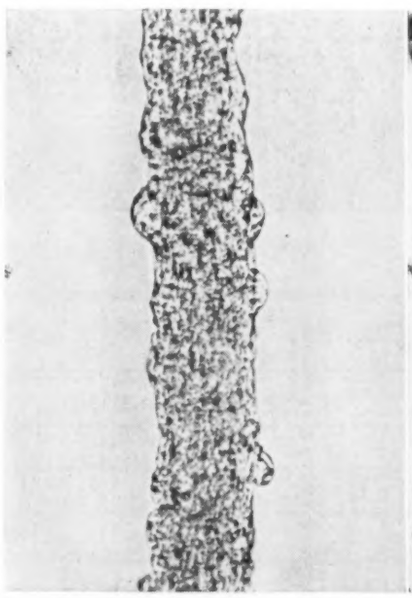


Fig. 5. Krais-Viertel reaction showing the grainy structure of the bubbles formed. (500x) *From "Textile Fiber Atlas," vonBergen-Krauss*

Fig. 6. Bacterial action on wool. This type of fiber damage is a frequent source of complaints. The fibers disintegrate, as illustrated. (115x)

Simple Inventory Record System

Is aid to efficient operation of the finishing department of a hosiery mill

By HENRY McCARN

KEEPING A PERPETUAL INVENTORY of first-quality stockings, irregulars, menders, odds, and redyes can be of great help to efficient operation of the finishing department of a hosiery mill. The simple system described in this article has proved most satisfactory in one southern plant, and it can be readily adapted for use in other mills.

The records are kept by stock clerk who is an assistant to the foreman of the finishing department. The stock clerk handles all details, such as recording dye orders, totaling orders for dye runs, etc.

Dye orders, numbered consecutively, are made out on the form shown in Fig. 1. Then they are recorded in the finished inventory book as shown in Figs. 2 and 3. When the dye order is filled in the gray department, a production card is filled out for each size as shown in Fig. 4. These tickets are perforated, and go with the goods to the dyeing department. The gray department keeps the size record; the dyer keeps dye order; and the boarder retains the boarding stub. The production card goes with the goods to the inspectors.

After the stockings are boarded, they are placed on trays, one size to a tray.

DATE Nov. 16-42 DYE ORDER NO. 10

STYLE 503 COLOR Victorious

8½	9	9½	10	10½	11
12	14	16	14	10	0

BOARD 31 INCHES TOTAL 66

Fig. 1. Form for making out dye orders.

DYE ORDER NUMBERS

1
2
3
4
5
6
7
8
9

Fig. 2. Loose-leaf form for entering dye order numbers in finished inventory book.

DYE RUNS STYLE 503

	COLOR	DATE		DYE ORDER NO.	8½	9	9½	10	10½	11	TOTAL DYED	TOTAL FINISHED
	Victorious	11	16	10	12	14	16	14	10	0	66	66

Fig. 3. Loose-leaf form for entering dye runs in finished inventory book.

Boarded stockings are issued to inspectors as needed. Inspectors should not be allowed to select their own work. As each tray is finished by an inspector, the top section of the production card shown in Fig. 4, is filled in.

As the stockings are inspected, they are placed in a cardboard box that holds one full dozen. The inspector puts a small piece of paper with her initials on it in each box. To keep the sizes separated, the boxes should be a different color for each size; for example, 8½, red; 9, white; 9½, blue; 10, gray; and 10½, green. Inspected work should be placed in bins according to style and color. From left to right place sizes 8½ to 10½, with all broken boxes on top of full dozens. Similar colors should be placed as far apart as possible, with the contrasting colors in between. This arrangement prevents mix-ups.

After each dye run is dyed and inspected, all production cards are taken up by the stock clerk and sorted according to dye-order number, size, style, and color. Production cards should be checked for errors before posting in the finished-inventory book. A form for keeping a record of finished inventory is shown in Fig. 5. As orders are put up and filled, the stock clerk records these in the finished-inventory book and deducts the amount of each size put up from finished stock as shown in Fig. 5. Stock on hand can be recorded in black ink, and orders put up in ink of a contrasting color, such as green.

The employee who puts up orders should be a conscientious worker and one who will cooperate with the stock clerk. For example, when putting up orders, it is sometimes necessary for him to substitute a size or color; but he should never do this without informing the stock clerk.

TO BE BOARDED 31 INCHES

PRODUCTION CARD

STYLE 503 COLOR 8½ Victorious

DYE ORDER NO. 10 DOZENS 12

FIRSTS

IRREGULARS

MENDERS

REDYES

ODDS

TOTAL

INSPECTED BY

HOURS DATE

BOARDING

STYLE 503 COLOR Victorious

DYE ORDER NO. 10 DOZENS

SIZE DOZ. BOARDED

BOARDED BY DATE

DYE ORDER

STYLE 503 COLOR Victorious

DYE ORDER NO. 10 DOZENS

SIZE DATE

SIZE RECORD

NO. 10 DATE 11/16/42

STYLE 503 COLOR Victorious

	8½	9	9½	10	10½	11	TOTAL
	12	14	16	14	10	0	66

Fig. 4. Perforated ticket used as a production card.

FINISHED INVENTORY RECORD STYLE NO. 503 COLOR Victorious

	DATE		DYE ORDER NO.	TOTAL DYED	8½	9	9½	10	10½	11	IRR.	MENDS	SEC.	ODDS	RE-DYES	TOTAL FIRSTS	TOTAL FINISHED
Stock	11	17	10	66	7	8 6	8 6	7 12	6 12	0	12 12	15 12	0	6	6	37 12	66
Order	11	18			4	2	6	3	2	0						17	
Stock	11	19			3	6 6	2 6	4 12	4 12							20 12	

Fig. 5. Form for keeping perpetual inventory record of finished goods.

Maintenance of Water Softeners

How to make up zeolite losses, increase capacity, and prolong life of equipment

Authoritative advices on backwashing sand filters and zeolite softeners, chemical clean-up of sand beds and zeolite and care of gravel bed was offered by Mr. Alling in our November issue. In this article he continues his discussion of the care of zeolite softeners under war time conditions.

By S. F. ALLING
Vice-president, Hungerford & Terry, Inc.

EVERY ZEOLITE WATER SOFTENER UNIT loses a small amount of zeolite mineral because of attrition and the various operating functions incident to the installation. Such zeolite losses, even though very small, should be systematically replaced at 6- or 12-month intervals in order to keep the zeolite water softening equipment delivering its full gallonage of softened water between regenerations. Otherwise, the zeolite softener has to be taken out of service a little too soon. This would mean too frequent backwashings and regenerations, with a waste of time and water and also often a waste of salt, since invariably the water softener operator uses the same amount of salt in the regeneration of his softener, regardless of whether it is 100% or only 95% full of zeolite mineral.

If the owner of a zeolite softener fills in the various measurements shown on the softener information sheet illustrated in Fig. 1, the equipment manufacturer can quite readily tell how much, if any, zeolite mineral is required to bring the top level of the zeolite bed up to the proper point. If the owner of the zeolite water softener has marked his softener tank where the top level of the zeolite bed should be, he can, by knowing the inside diameter of this softener, determine from Table I the number of cubic feet of zeolite replacement material required for each inch loss of material from the tank.

INCREASING CAPACITY. There are many thousands of zeolite water softeners in use today containing standard greensand type zeolite mineral with an exchange value of 2,800 grains to the cubic foot. In mills where the owner of the water softening equipment needs a greater amount of soft water between regenerations, he can advantageously and at little cost change his standard greensand zeolite for higher-capacity, higher-efficiency greensand zeolites, a number of which are available today. This not only helps the owner of the water softener by keeping his expenditure for additional softening capacity at a minimum, but it also frequently eliminates the necessity of buying an additional softener tank, strainer system, and other metal parts comprising a water softener unit—and of which there is a great scarcity at this particular time.

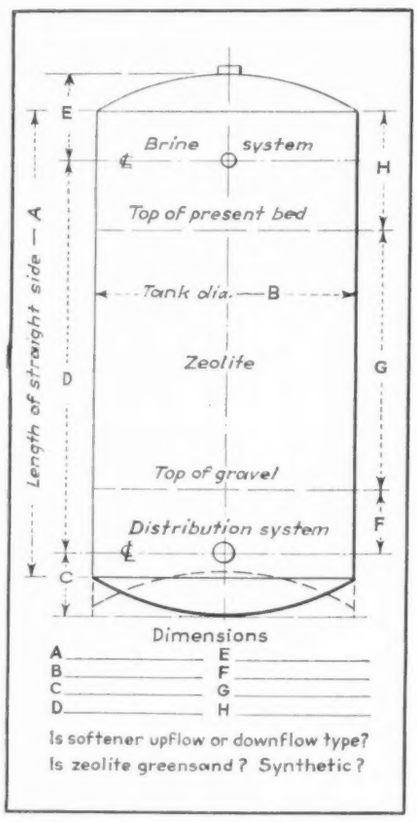


Fig. 1. Softener information sheet which permits manufacturer to tell how much zeolite is required to bring bed to proper point.

Following is a typical example which illustrates how advantageous it can be to replace standard greensand zeolite with higher-capacity, higher-efficiency material: A certain 8-ft. diameter vertical softener contains 200 cu. ft. of standard greensand zeolite, with an exchange value of 560,000 grains and requiring the use of 280 lb. of salt for regeneration. By replacing this 200 cu. ft. of standard greensand zeolite with 200 cu. ft. of higher-capacity, higher-effieciency greensand zeolite, the softening capacity per regeneration becomes 800,000 grains, still using the same amount of salt for regeneration, namely, 280 lb.

This change means two things. First, that the softener produces 43% more

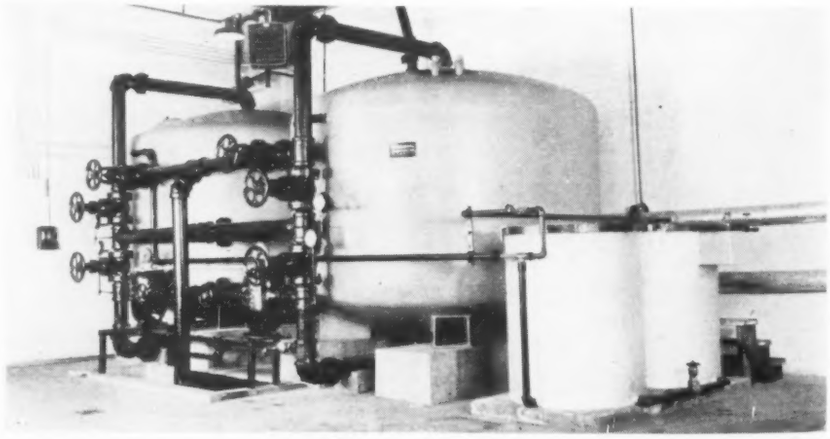


Fig. 2. Careful maintenance of zeolite water softeners is essential to keep them at peak efficiency and to increase their life, thereby conserving materials needed for war work.

gallons of soft water between regenerations, thus saving greatly on wash and regenerating water and attendance time for regenerations. Second, it means a net saving of 30% on the salt required to remove each 1,000 grains of hardness from the water supply being softened.

In innumerable instances, owners of zeolite equipment have been taking advantage of higher-capacity, higher-efficiency greensand zeolite, in order to satisfy their increased needs for softened water without an additional water softener unit.

PAINTING. Keep the outside of the steel filter or water softener tanks, as well as the salt brine tanks, well painted, using any durable, attractive, protective covering available. By doing this, you will be doing much toward prolonging the life of the main "housing" of the water purifying equipment.

But when it comes to painting the inside of the filter or softener, leave the interior of the equipment unpainted and as is. Above all, don't remove the tuberculations that have accumulated on the inside of the steel filter or softener tanks up near the top. When you remove these tuberculations, you are sure to pull or take away some of the tank metal, and when this is repeatedly done, it isn't long before replacement of the softener tank with a new one becomes necessary. The tuberculations which accumulate in the top of the tank are iron oxide, and this iron oxide, despite its unsightly appearance, provides quite excellent protection for the inside top of the tank.

Table I. Volume of zeolite per inch depth in vertical softeners.

Diameter of unit	Area (sq. ft.)	Volume per inch depth (cu. ft.)
3′0″	7.1	0.60
3′6″	9.6	0.80
4′0″	12.6	1.05
4′6″	15.9	1.33
5′0″	19.6	1.63
5′6″	23.8	1.99
6′0″	28.3	2.36
6′6″	33.2	2.77
7′0″	38.5	3.20
7′6″	44.2	3.68
8′0″	50.3	4.20
9′0″	63.6	5.30
10′0″	78.5	6.55

Painting the inside of the filter or softener tank opposite the sand or zeolite mineral beds is also of very little value, for the reason that if the equipment is backwashed correctly, the sand or zeolite grains will rapidly rub off any paint in a short period of time, and make its application costly and useless.

BRINE TANK. The brine tank on a zeolite water softener always takes a severe beating. It has a difficult job to perform. Its purpose is to make and store corrosive salt brine, and great care should be taken, therefore, to keep the interior of this brine tank carefully protected from the salt brine. If the tank is badly rusted and corroded, clean it up, wire brush it carefully, and give it several thick applications of any one of the many asphaltic base enamels that are on the market today. Although such asphaltic enamel is not particularly attractive, it will do a good job, at little cost, of protecting the steel plate in the brine tank and keeping this part of the water softening equipment in service for a great many more years than would otherwise be possible.

Finally, it is suggested that you thoroughly check up on your water treating equipment now and put it in ship-shape condition so that it may not only satisfy your present greatly increased water demand, but also last you through the present emergency.

Cotton Tire Cord Terms

USE OF UNFAMILIAR TERMS in recent discussions of cotton and rayon tire cords has led to considerable confusion as to the properties of and differences between various types of cotton cords. The following explanation of the meaning of such terms as "low gage," "high gage," "low stretch," and "Super HH" as applied to tire cords should aid in clearing up some of the prevalent misunderstandings. The definitions and other data are based on information supplied to TEXTILE WORLD by Bibb Mfg. Co.

The term "low-gage" has been used recently to designate cords of approximately 0.025 in. diameter, as contrasted with the cords formerly employed of approximately 0.032 in. diameter. The cords of 0.025 in. diameter were developed by Bibb Mfg. Co. as a part of the "Super HR" process. However, the term "low-gage" was not applied by Bibb to the "Super HR" cords. Low gage is merely one of the characteristics of this cord. Whether a cord be "high gage" or "low gage" is simply a matter of yarn number and ply. Other cotton cords are on the market which are as low in gage as are "Super HR" cords.

The original "HR" process developed by Bibb Mfg. Co. was a method of manufacturing the cords under compression and tension after the gums or pectins in the cotton fiber had been softened and then allowing the gums to set. The "Super HR" cord is made by a refinement of the original "HR" process, whereby higher density, lower relative gage for weight, and better heat resistance are achieved. A particular advantage of the 0.025 in. diameter "Super HR" cord is that a tire can be built with less rubber which has a strength greater than that of a tire made of larger diameter cords. In addition, as such tires are thinner, less heat is generated as they are flexed during use, and tire life is increased.

Cotton cords of comparatively high density and low stretch are made by other manufacturers by wetting cords produced in the usual way with water containing a penetrant and then stretching and compressing the cords. Such cords are ordinarily referred to as "low stretch" cords.

The following paragraph on the saving of rubber possible with "Super HR" and rayon cords is also based on data supplied by Bibb Mfg. Co.

Tires are being made with "Super HR" cords using plies of fabric coated with rubber of 0.037 in. gage or even lower. The gage of a rayon cord 1100-den., 2-ply with rubber coating is given in a United States Rubber Co. patent as 0.046 in., and according to laboratory analyses is 0.044 in. This means that use of "Super HR" cords will result in a greater saving of rubber than is effected with 1100-den. 2-ply rayon. The reason that it is possible to use a thinner skim coat of rubber on "Super HR" cords is because of the greater flexibility of cotton fibers as compared to rayon filaments. Thus, in laboratory tests, rayon cords with a normal strength of 13.17 lb. broke at an average of 13.75 lb. when looped like a hairpin with No. 24 copper wire and tested in a Scott cord testing machine with the rayon placed in the upper jaw and the wire in the lower jaw so that the doubled rayon cords would be pulling at the point of cross against the doubled copper wire. When "Super HR" cords with a normal tensile strength of 12.83 lb. were tested in the same way, the copper wire broke at an average of 17.16 lb.

Surface-Active Agents

What they are and how they work in wetting-out and detergent operations

The term "surface-active agents" defines a group of chemical compounds which includes most of the wetting agents, detergents, foaming agents, and emulsifiers known. The following article telling what surface agents are and how they work was written by a member of the research staff of E. F. Houghton & Co., and is reprinted by special permission from a recent issue of that company's publication *The Houghton Line*.

SURFACE-ACTIVE AGENTS, in general, have the property of affecting the forces which apply on surfaces and particularly on liquid surfaces. For instance, in the case of a surface between a liquid and a gaseous material, the forces are generally referred to as "surface tension." In the case of the surface between two non-miscible liquids such as, for instance, mineral oil and water, the forces are referred to as "interfacial tension." Similarly, in the case of a liquid and a solid junction, the forces are generally referred to as "interfacial tension."

The function of a surface-active agent, generally speaking, is to reduce these forces known as "surface tension" and "interfacial tension." By reducing these forces, it becomes possible for two liquids which are not miscible to become emulsified or for a solid material which cannot be wetted with the liquid medium to become wet out; that is to say, to become penetrated by the liquid medium. The degree to which this penetration takes place depends, of course, on the nature of the oil (or, more properly, the liquid medium) and of the solid.

If the solid happens to be a textile fiber and the liquid medium is water, the fibrous material becomes completely saturated with water. If, on the other hand, the solid medium happens to be a piece of hot metal and the liquid medium a quenching oil, the effect of the surface-active agent is merely to enable the oil to form more intimate contact with the metal, thus increasing its capacity to cool this metal.

For the remainder of this discussion, the liquid medium will be water and the application will be that of textile processing.

Surface-active agents of various types find wide application in textile finishing.

TWO TYPES. Generally speaking, surface-active materials are composed of two unlike chemical radicals or groups. To one group, the adjective "hydrophobic" has been applied. This adjective is derived from the word "hydrophobia" and literally means something having a "morbid dread of water." In the case of surface-active materials, nearly always it consists of a chemical group made up of a long hydrocarbon chain which is usually derived from an oil, such as mineral oils, fats, fatty alcohols, etc. This part of the surface-active chemical molecule tends to be soluble in oils, waxes and similar materials, but not soluble in water.

The other group of surface-active agents is technically referred to as "hydrophilic," which is to say it tends to be readily soluble or miscible with water. This group may take the form of a sulphuric acid group, a sulphonic group, an amine group, a polyglycol ether group, or, in the case of soap, a neutralized carboxyl group.

All of these groups are readily soluble in water and, unless attached to a very long hydrophobic group, produce compounds which are either soluble or emulsifiable in water. Thus it will be seen that in a surface-active agent there are two tendencies—one to stay out of water, and the other to dissolve in water, plus the fact that the part of the molecule which tends to stay away from water readily tends to mix with materials such as oil and waxes. When these two tendencies are properly balanced, a material is produced which will cause waxy materials or oily fibers to become wet out or penetrated by water solutions.

WETTING ACTION presumably occurs in a manner something like the following. The hydrophobic part of the surface-active agent molecule anchors itself to the oily or waxy material and, with the aid of the hydrophilic end of the molecule, leads the water into the fiber on which the oil or wax is located, thus producing the effect commonly known as wetting out. In the case of a mixture of oil and water, the effect is for the hydrophobic part of the molecule to mix with oil while the hydrophilic part of the molecule mixes with water, causing the two materials to become mixed. Thus an emulsion is formed.

In the formation of a surface-active agent, it is not necessarily true that there shall be only one hydrophobic group and only one hydrophilic group; there may be more than one of either type. What is necessary is that there is a proper balance between the two so that neither tendency completely dominates. Thus in the case of wetting agents water solubility of the material is a prerequisite, whereas in the case of an emulsifier this may or may not be the case. Some of the most effective emulsifiers form emulsions in water but are not in themselves completely soluble in water. One might say that the hydrophilic properties of the wetting agent molecule should be greater than in the case of emulsifiers. Unquestionably this is true, since many good emulsifiers have little wetting action as determined by the ordinary methods.

The properties of a surface-active agent are, to a certain extent, determined by the location of the hydrophilic group in the molecule. Generally speaking, in the case of detergents, the hydrophilic group is found at one end of the molecule, with the hydrophobic group strung out as a long chain to the other end of the molecule. A product of this type might be likened to a train which has, for the hydrophilic end, the locomotive, and the hydrophobic end the cars and the caboose. Simple examples of this type of surface-active agent are soaps, fatty alcohol sulphates, polyglycol condensates, alkylol amine

(*Continued on page* 98)

Cushion Starters on Woolen Cards

Peerless Woolen installs new system designed to provide slow acceleration

REALIZING THE DESIRABILITY of smooth, gradual acceleration for the important carding operation, plant engineers at Peerless Woolen Mills, Rossville, Ga., began to study the problem several years ago, working in conjunction with representatives of Westinghouse Electric & Mfg. Co. Today they are making extensive use of the Lammers cushion, developed by careful experiments in their plant, on several types of woolen cards.

The first drives used on the woolen cards consisted of 5-hp. motors on the breaker cards, 10-hp. motors on the finisher cards on their three-cylinder sets, and 10-hp. motors on the double breaker and double finisher cards on their four-cylinder sets. The clutch was assembled on the motor shaft and driven by chain to the countershaft. The machine was driven from the countershaft. This method is illustrated in Fig. 1. The next step was the application of a gear motor, which eliminated the external gear reduction. The final step was the introduction of cushion starting into the electrical circuit on the motor leads, thereby eliminating the necessity for the friction clutch. This method is illustrated in Fig. 2, and a photograph of the drive applied to a card in the Peerless plant is shown in Fig. 3.

If cards are started up in jerks or with an uneven, sudden motion inherent in the regular type of starters, the stock will be damaged by having weak or heavy spots, and it will be necessary, in order to procure an even yarn, to re-run these ends. Considerable time was lost at Peerless by having to run out these damaged ends and start them over. This reworking is likewise bad for the stock. A slow acceleration results in a better product, eliminates the necessity of re-running the ends, saves time otherwise lost, increases machine production per day, and—by the very nature of the starting motion—is easier on the machine and reduces maintenance costs. The cushion starter was designed to make it possible to get this slow acceleration when starting up the machine. From stand-still to full speed the acceleration is gradual over a period of not less than 20 sec. Incidentally, there are several other methods that can be employed for obtaining gradual acceleration of woolen cards, and some of these are being employed successfully in various plants.

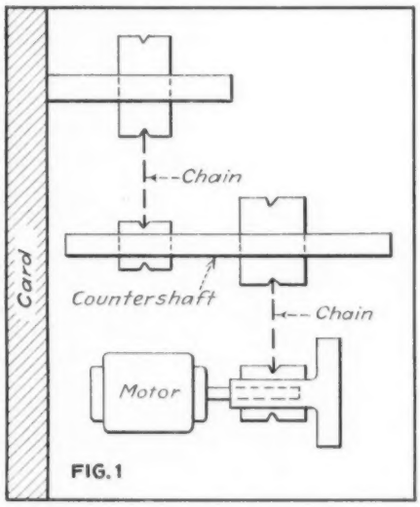


Fig. 1. First type of drive used on cards at Peerless Woolen Mills.

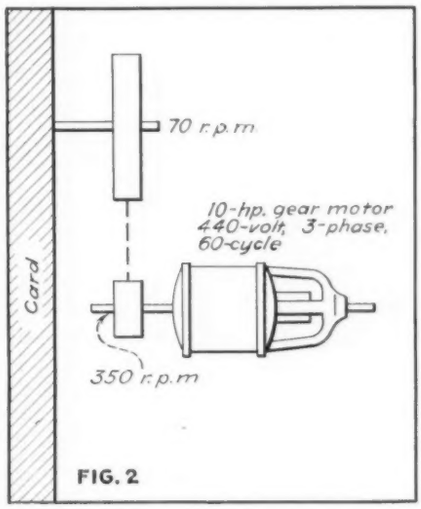


Fig. 2. Latest type of drive for cards installed at Peerless Woolen Mills.

TO OBTAIN CUSHIONED STARTING with a three-phase, squirrel-cage motor, it is necessary to provide electrical means to limit the initial torque to a value that will just begin to turn the cylinders, and then increase gradually that torque as the machine accelerates to the full running speed. This will give the maximum smoothness of starting and acceleration. This can be likened to the effect of gradually opening the valve to a steam engine to a point where the engine will take up its load at full speed.

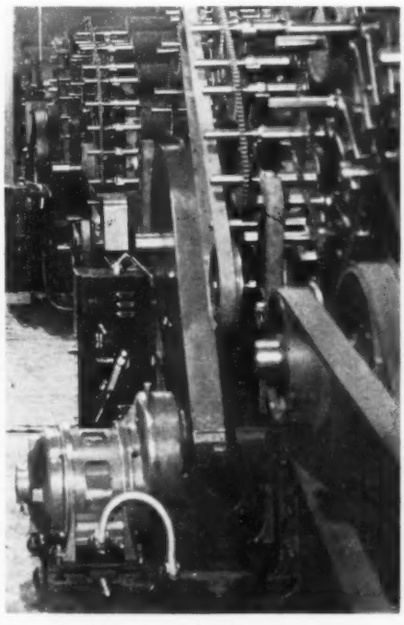


Fig. 3. Photograph showing application of cushion starter to cards at Peerless Woolen Mills.

It is well known that a three-phase motor will produce no torque if it is operated on any less than three phases. To get the desired cushioning effect, all that is necessary is to control the amount of single-phasing of the motor in starting. This is accomplished by introducing a resistor in one phase only. The higher this resistance, the greater is the amount of single-phasing effect and the less torque at the shaft of the motor. For example, infinite resistance will result in zero torque; on the other hand, zero resistance results in maximum torque. Accordingly, it is only necessary to control the resistance to obtain a desired torque that will barely start the cylinder rolling. In this way, the machine is started without shock or jar and the greatest protection is afforded the teeth of the card clothing.

The gradual acceleration effect is inherent in the electrical circuits; that is, as the motor begins to accelerate, the current gradually reduces, and this

in turn reduces the effect of the single-phasing, because the voltage drop in the resistor automatically becomes less and less. At the end of 30 sec., a relay cuts out the entire effect of this resistance for normal operation.

Only one adjustment is needed on the control; namely, to determine the value of torque that will barely turn the cylinder from stand-still. The resistance is then set at this point. The torque value will vary slightly with different machines and with different temperature conditions. To make this adjustment convenient, taps are provided on the resistor, accessible at the front of the control panel, and, with a single-phase resistor, the adjustment is confined to the changing of a single jumper.

The timing relay is used to cut out the resistance automatically after the machine is brought up to speed for normal operation. The interval of time at which the relay is set has nothing to do with rate of acceleration, because, as previously explained, this is inherent in the electrical circuits. It only remains to set the time relay at some predetermined value long enough to cover the longest rate of acceleration. No further adjustments are required here. For example, if the machine accelerates to full speed in 30 sec. or less, any setting of the time relay above 30 sec. is all that is required when running. This might raise the question as to why use the time relay, but it must be borne in mind that in order to get full efficiency from the motor there must be no resistance in any one of the three phases.

THE CONTROL is provided with overload relays to afford full running protection to the motor from over-loading—also full protection in the event the motor fails to start for any reason. As the resistance is designed to carry stalled current continuously, full protection is afforded under all conditions.

This is important because it is possible to set the starting point very close to the actual torque requirements for starting; furthermore, it is desirable that it be so set. This is the whole purpose of the control.

The first installation of the cushion starter was of the manual type, but it was found that some operatives did not exercise good judgment; and, in starting the machines, threw the starter handle too rapidly to full-speed position, defeating the purpose of the starter. The magnetic push-button type was then adopted to eliminate the human element and automatically control the rate of acceleration.

The control is arranged to permit the installation of a reversing switch to change the direction of rotation when the card is being ground. This was formerly taken care of by a separately mounted three-pole, double-throw safety switch which took extra floor space.

The first installation was made in 1938. From that time to the present much study has been put on the problem, and today there are more than 50 starters giving excellent service on Soutex, Davis & Furber, and Whitin cards. Others are being installed gradually whenever the original starting mechanism becomes troublesome. The management states that although this type of starter is expensive, it is unquestionably self-liquidating.

Surface-Active Agents

(*Continued from page 96*)

condensates, etc. Generally speaking, materials which are good detergents are also good foaming agents.

With respect to materials which have an exceptionally high degree of wetting-out ability, there is a great deal of evidence to support the view that the hydrophilic group should be located somewhere in the middle of the molecule. This type of surface-active agent might be likened unto a "V" with the hydrophilic group at the bottom of the "V" and two hydrophobic groups streaming out from it. Typical examples of this sort of material are the secondary alcohol sulphates, alkylated naphthalene sulphonates, sulphated fatty esters, sulphosuccinic acid esters, etc. These materials have very little detergent action and also have much less tendency to foam than is the case with the materials which are good detergents.

CONTROLLING PROPERTIES. From the above, it will be apparent that if one wishes to synthesize a "high-powered" wetting agent, the mode of attack will be somewhat different than is the case if a fine detergent is the product in view. In a few instances it has happened that both wetting action and detergency have been combined in one material. However, in such cases it is generally true that by modification to produce better wetting-out properties, the detergent properties usually become somewhat decreased. However, in view of the great desire in the industry to use the smallest possible number of materials, most surface-active agents marketed represent, to a small degree at least, a compromise in order that the material shall have both wetting and detergent properties, neither being present in the maximum possible amount.

In the past, most of the wetting-out agents and detergents have been of the general nature of an ionic material; that is to say, aqueous solutions of these materials will conduct electricity in the same way that solutions of ordinary salt do. In some cases, the hydrophobic part of the molecule is in the anion or negatively charged ion of the solution. In other cases, the hydrophobic part of the molecule resides in the cation or positively charged ion.

Materials of this sort are generally known as anionic surface-active agents and cationic surface-active agents, respectively. It has been found that when negatively charged fabrics, such as cotton and rayon, are being processed, the cationic surface-active materials tend to be deposited or exhausted on this kind of fiber and do not rinse out of the fiber readily. For this reason, cationic surface-active materials are used as aids in the dyeing of cotton and rayon since they facilitate the use of negatively charged dyestuffs. A deeper and more uniform shade is thereby often produced.

As mentioned above, most of the surface-active agents which have been on the market are either anionic or cationic. However, recently, surface-active materials have been developed which are called "non-ionic"; that is to say, they do not ionize in solution. The chief materials of this character are the alkylene oxide condensation products made from fatty acids and fatty alcohols by condensation, usually with ethylene oxide or polymers of that material. These condensation products do not form salts and are entirely inert in their reaction to conditions like hard water, calcium chloride gum solutions and similar precipitating influences, and, therefore, have achieved some popularity in special applications where these properties are of importance. Generally speaking, however, these condensates have not as yet begun to approach the popularity of the ionic type surface-active materials.

Thus it will be seen that "surface-active agent" is a term covering a very wide variety of materials which have both different chemical characteristics and physical properties. The choice of the surface-active material for a given application should be a matter of very careful consideration and must be based on a thorough knowledge both of the general characteristics of the wetting agent or surface-active material and the job to be done.

TEXTILE EQUIPMENT NEWS

Tray Elevator in Hosiery Mill

TO SPEED UP the flow of Army socks from the boarding department, to pairing department to inspecting and packing department, Wm. G. Leininger Knitting Co., Mohnton, Pa., has recently installed a Link-Belt "tile-type" tray elevator. This tray elevator, which replaces a conventional freight elevator, is playing an important part in keeping employees on second and third floors of the plant supplied with work. The following description of the tray elevator is abstracted from a recent issue of *Link-Belt News*.

The new elevator has a centers height of 22 ft. 6 in. and employs an elevating medium consisting of 2 ft. wide, 2 ft. 6 in. long metal trays pivotally suspended at 11 ft. 6 in. intervals from and between two strands of malleable iron Ewart link-belt. These chains are operated at 29 ft. per min. from the elevator head-shaft through a Silverlink roller-chain drive from a triple-reduction helical-gear speed reducer equipped with ¾-hp. electric motor.

The supporting structure is built of wood. Metal strips line the vertical timbers between which the two strands of chain and the tray guide rollers are confined in the two vertical runs. Specially bent metal strips guide the trays and keep them steady in passing around head wheels from the "up" to the "down" side. Large-diameter head and foot sprocket wheels serve to space the "up" and "down" runs and provide proper clearance for trays to pass above and around the elevator head shaft. An electric pushbutton station is mounted on the elevator framework at each floor, for starting or stopping the machine whenever desired.

An attendant in hosiery boarding department on first floor piles 30 doz. hose on a board and then sets the load on an ascending elevator tray to be carried to third floor. There an attendant, who can clearly see the tray coming up and making the head turn, takes hold of the board, lifts the load off the tray on the descending side of the machine as shown in Fig. 1. He then carries it to nearby workers, whose duty it is to pair the hose. Although it remains for an attendant to do the unloading manually, the load is very light, and if not removed in time, it could but continue the travel completely around to the same point.

Board-loads of paired hose are set on an elevator tray on the descending run at the third floor and unloaded on the same side of the machine by an attendant on the second floor, where inspection, stamping the size and brand name, banding, and packing are carried out. This work is done systematically by girls stationed along both sides of tables equipped with a moving belt on which the hose move from one worker or operation to the next.

Fig. 1. Head of tray elevator, showing tray on descending side being unloaded at third floor. After hosiery has been paired, it is loaded on tray at same point and lowered to second floor.

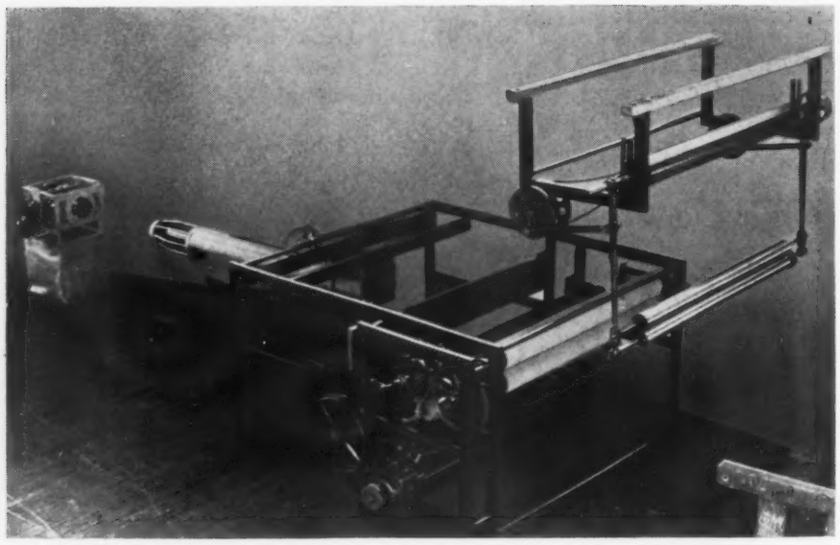
There are two of these conveyor tables, as illustrated in Fig. 2. Civilian hose are packed into the smaller boxes on table at right. Soldiers' hose, all handled on the other conveyor table, are simply banded and discharged over end of the conveyor, down a chute to the first floor to be packed into large cases for shipment.

Fig. 2. Conveyor-equipped hosiery inspection and packing tables. War order work is handled on table at left; civilian hose on table at right.

Range for Knitted Fabrics

Development of a range for handling knitted fabrics after they have been wet processed, has been announced by Birch Brothers, Inc., Somerville, Mass. The range is made up of a splitting and opening machine in which is incorporated a vacuum extractor that is preceded by a motor-driven de-twisting machine, and followed by an individual ceiling-type folder driven from the opening machine.

Twist in the knitted fabric, which is in rope form, is removed by the reversible motor-driven de-twisting machine from where the fabric continues, without stopping, to the rotatable nose of the semi-circular table or tube. This table



Range for de-twisting, opening, slitting, extracting, and folding knitted fabrics in one operation. (Birch Bros.)

has a slot through which light shines to assist the operator in guiding the drop stitch of the fabric straight to the rotary splitting knife. After being split, the cloth is opened and extracted by passing over adjustable-slot vacuum boxes and thence to the folder.

The range eliminates excessive handling of the fabrics by combining a number of operations into one. Two men can remove the twist, split, open, extract, and fold a knit fabric at a speed of from 15 to 40 yd. per min. This range may be operated on Army overcoating at speeds as great as 25 yd. per min.

Unit Heater

Substitution in unit heaters of cast-iron heating sections for those formerly of aluminum has been announced by D. J. Murray Mfg. Co., Wausau, Wis. This procedure is in accordance with WPB requests. Use of all cast-iron in the unit heater now creates a heating system, including the piping, of only one type of metal, thus eliminating the possibility of electrolysis that produces corrosion. The heaters are built to withstand a steam pressure of up to 250 lb.

Rayon Tow Used for Pump Packing

Rayon tow is being employed as a mechanical packing material for pumps, hydraulic shears, and other equipment, according to a recent announcement made by E. I. du Pont de Nemours & Co., Inc., Wilmington, Del. Formerly braided rope made of imported long line flax was used for packing purposes.

Color Harmony Index

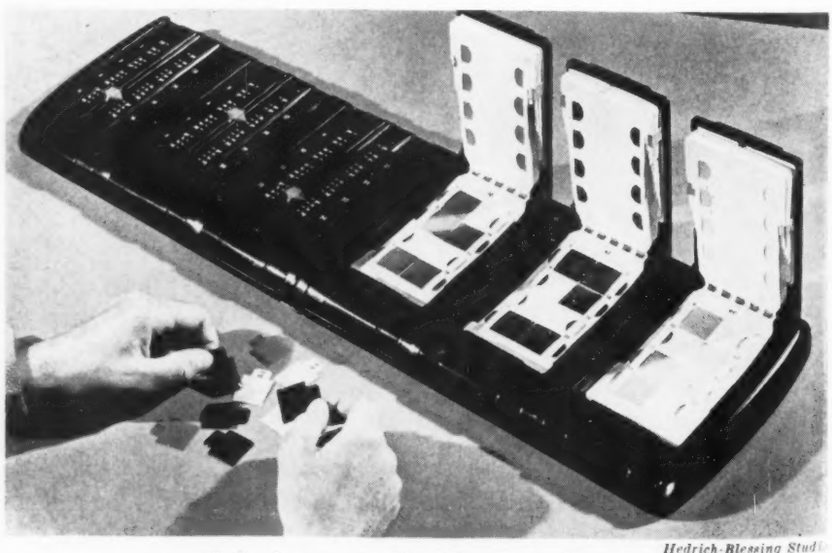
Development of a color-harmony index based on the Ostwald theory is announced by Color Laboratories Division, Container Corp. of America, 111 West Washington St., Chicago. The index consists of a Bakelite unit holding 680 cellulose acetate chips of different colors, each 1 in. square and dull on one side and shiny on the other. The chips are arranged on celluloid cards, eight to a card, in such a way that exact complements are adjacent. Thus, when a color is selected, its most striking harmonious contrast is located at the same time. The index is shown in the accompanying illustration. Colors are found by moving an indicator on the cover and pressing a button, whereupon the cover snaps up, revealing the card holding the chip of the desired color. The number of harmonious color combinations which can be found is said to be infinite. A book explaining the use of the color index and two work charts is supplied with the index. It is believed that the index will find wide use in the textile and other industries where selection of harmonious color combinations is of importance.

Simultaneously with the introduction of the color harmony index, Container Corp. of America announced the publication of a "Color Harmony Manual," which is reviewed on page 106 of this issue.

Metal Protective Paint

A paint, called Bar-Rust, that protects the outside or interior surfaces of mill buildings or structures having an appreciable amount of exposed metal, has been developed by Devoe & Raynolds Co., Inc., First Ave. at 44 St., New York. This paint is strictly for metals and prevents rusting. A number of rust-inhibitive primers are incorporated in the paint to prevent the development of rust, and also grasp hold of the metal itself to provide a tough and elastic film which will expand and contract at the same ratio as does the metal over which it is applied.

A number of finish-coat materials have been developed of different colors designed to go over the primers and stand up to an outstanding degree in the face of all exposures, interior and exterior, including rain, sun, sleet, ultra-violet and infra-red rays, industrial acid fumes, gas, etc. Both primers and finish-coat materials in this rust-preven-



Hedrich-Blessing Studi

Color harmony index (Container Corp.)

tive paint are so formulated that they will flow out in a uniform film thickness and have the ability to cling to the surface around sharp edges, rivet heads and bolts.

Useful Accessories for Textiles

A black coating that is resistant to acid and alkali has been developed by Protective Coatings, Inc., Detroit, Mich. This coating may be applied by brush or spray and dries rapidly. One coat will replace galvanizing for all exposed surfaces and two or more coats are recommended for liquid contact. Tanks, vats and other vessels where abrasion is not present, may be coated with this material.

Skids constructed of top and bottom wood slats reinforced with steel at the ends and in the center replace those made entirely of steel for handling materials. This product is now being manufactured by Union Metal Mfg. Co., Canton, Ohio. Bolted construction permits easy replacement of wood slats, while the steel ends protect the skid from damage by power trucks.

An electric relay that may be used with any floating contact device has been developed by Barber-Colman Co., Rockford, Ill. This Motorelay can be used where the control current exceeds the contact rating of the control instrument.

Pay rolls and job costs can be figured in a fraction of the usual time through the use of a calculator developed by Berger-Bricker Co., Los Angeles, Calif. This manual calculator may be used in figuring all hourly rates of pay from 50 cents to $1.75 with half-cent spread between rates. It covers all time periods up to 104 hours with divisions of one-tenth of an hour.

A drum loading hand truck equipped with a safety catch for handling all drums, kegs and barrels that contain a chime or a bead, has been developed by American Pulley Co., Philadelphia. This safety catch permits one man to handle drums or barrels as the catch holds the barrel firmly to the truck.

Portable luminaires for localized lighting have been developed by Day-Brite Lighting, Inc., St. Louis, Mo. These fluorescent lamps may be moved about to supplement overhead lighting by providing glare-free illuminaton.

Non-skid floors either wet or dry, may be produced using an aggregate offered by Walter Maguire Co., Inc., New York. This abrasive material mixed with Portland cement and water for the floor topping forms a firm non-slipping surface.

Mill Maintenance Section

Cleaning Resins from Dye Kettles

Phenolic and thermo-setting type resins must be removed from dye kettles before they may again be used. Because of the tenacious properties of these resins, removal is difficult. According to an article appearing in the *Nickelsworth*, third quarter, 1942, and published by International Nickel Co., Inc., the removal of hardened resin layers from nickel-clad steel or Monel kettles is most easily accomplished by boiling with caustic soda solutions. The caustic used for this purpose is usually the flake caustic product and in strengths from 10 to 30%. The caustic solutions are usually heated in the kettles to temperatures close to boiling, in the course of which the phenolic base or other types of thermo-setting resinous compounds are readily dissolved. Following the removal of the caustic, the kettles should be rinsed with cold water.

Cleaning of small articles, such as dippers, stirring rods, and pails used in the handling of thermo-setting resins, may also be accomplished with organic solvents, such as alcohol or ether. In fact, with the exception of strong acids, any of the resin solvents may be used successfully for the cleaning of nickel and nickel alloy equipment used in their processing and handling. The caustic soda cleaning is the least expensive and seems to be most popular, both for this reason and for its efficiency in dissolving completely the hardened resins.

Tips on Fluorescent Installation

Next time you install fluorescent lighting, take a tip from a hint contained in a recent issue of *Hygrade Lighting News*, published by Sylvania Products Inc., formerly the Hygrade Sylvania Corp., and reduce eye strain by mounting the exposed lamps in the field of vision, as illustrated in Fig. 1, and not perpendicular to the line of sight, as shown in Fig. 2.

While fluorescent lamps have a much lower brightness than incandescent lamps of comparable light output, this brightness is not sufficiently low to permit their use without reservation for burning in exposed locations.

The brightness of a fluorescent lamp depends, to a very marked extent, upon the angle from which it is viewed. This brightness is at a maximum in a direction perpendicular to the tube and de-

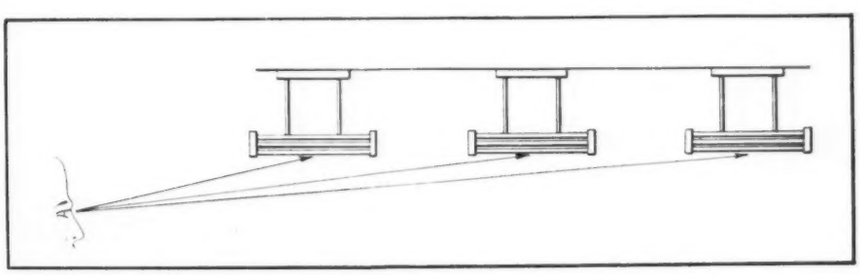


Fig. 1. Preferable method of mounting has exposed lamps in the field of vision.

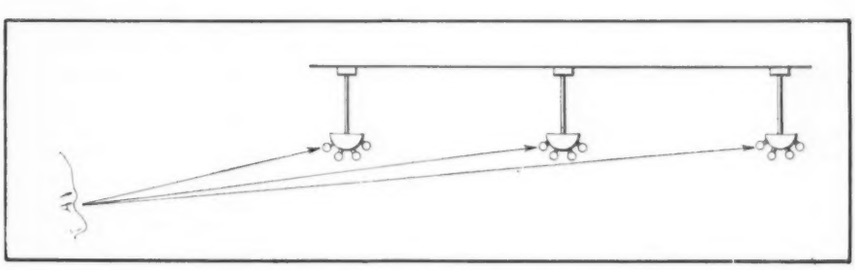


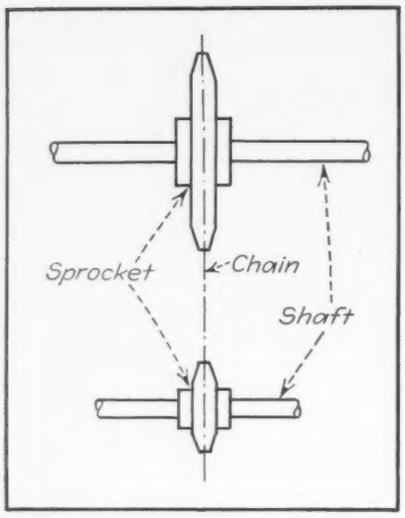
Fig. 2. Exposed lamps mounted perpendicular to the line of sight exposes the eye to the maximum brightness of lamps in the field of vision.

creases as the angle of view departs from this direction.

Where it is necessary to use the lamps under such conditions that exposed lamps are in the field of vision, it is best to arrange the lamps so that they run in the direction in which they are normally viewed.

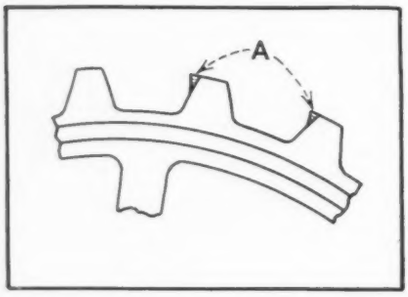
More Service from Chain Drives

FOUR SIMPLE DIRECTIONS, if followed, will not only make chain drives last longer, but will make them run better and lessen possibilities of interrupted service. These directions, as given in a recent issue of *Link Belt News*, are:

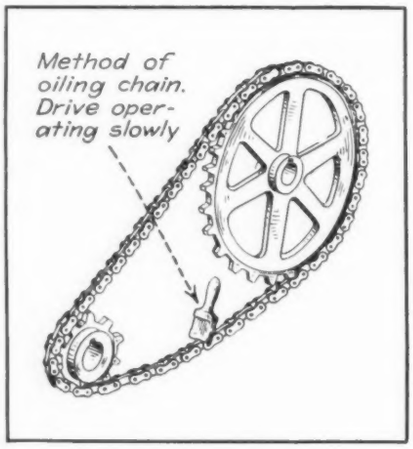


Proper Alignment — Be sure that sprocket wheels are in line on the shafts. If the sprockets are not exactly in line, a side pull develops which concentrates the load on the sides of the sprocket teeth, and on one side of the chain. This faulty alignment results in excessive wear on both chains and sprockets.

Proper Adjustment—The chain should be run just a little slacker than a belt, about as shown in the above illustration. Too much tension causes undue wear on the chain and excessive friction on the bearings. Excessive slack may allow the chain to jump the sprockets, or ride the teeth and break.



Well-Fitting Sprockets—Look at the sprocket wheels from time to time to make sure that they are not worn enough to injure the chain. Worn cast-tooth sprockets can be improved by grinding the shape of tooth as shown in the illustration. Grind away the shaded section *A*. This will result in smoother action between chain and sprockets. If the teeth are badly worn, the wheels should be replaced with accurately made and close-fitting sprockets.



Frequent Lubrication—Chains not running in oil should be lubricated at frequent intervals. A good grade of light cylinder oil should be used. A paint brush is a good thing for applying oil to the chain joints. Paint open joints on open (upper) side. Oil closed joint chains on inside (upper side of lower run as illustrated).

Care For Your Fire Extinguisher

Air-raids, incendiary bombs, and even the possibility of a fire caused by spontaneous combustion necessitates the maintaining of fire extinguishers in a mill in perfect condition. *Firefax*, issue No. 24, published by Pyrene Mfg. Co., lists the following maintenance hints:

1. Discharge and recharge your fire extinguisher once a year. This is a good time for employees to practice using the extinguisher. After use, remove the ring cap and acid bottle cage containing the bottle and lead stopple. Wash all parts thoroughly and drain water through hose and nozzle.

2. For best results and safety to operator, use only the chemical extinguisher recharges supplied by extinguisher manufacturers; these are correctly compounded. Dissolve the soda in 1½ gal. of water, stirring briskly until it is completely dissolved. Pour the solution into the extinguisher and add enough water to bring the solution level up to watermark on the inside of extinguisher.

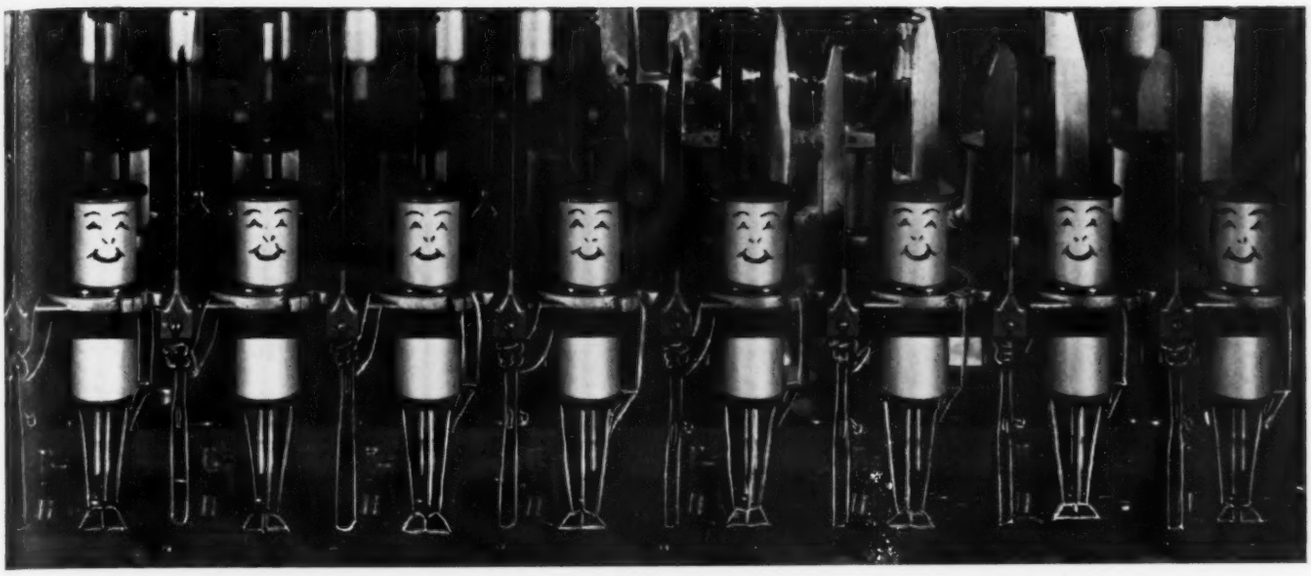
3. Remove the cap from the 8-oz. acid bottle, which contains 4 oz. of 66° Be. sulphuric acid, and insert the lead stopple in the mouth of the bottle. Place the acid bottle in the cage and gently slide the cage into the extinguisher. If head gasket in ring cap needs replacing use gasket supplied by extinguisher manufacturers to assure correct thickness. Put a little petroleum jelly or cup grease on threads and screw ring cap in place, making sure that at least four threads are engaged. If the extinguisher has a manual stopple, have the stopple in open position before putting on or taking off the ring cap.

4. Record the name of the operator refilling the extinguisher and the date on the recharge tag.

Lubrication of Spindles

Frequent oiling and cleaning of spinning spindles are a must today if they are to last for the duration under two- and three-shift operations. H & B American Machine Co. in a recently published booklet entitled, "H & B Lubrication Manual," offers a number of excellent suggestions on the care of spindles consisting of oiling, cleaning of bolsters and spindles, and the flushing of the bolster case to remove old oil. Suggestions concerning solvents used in flushing are also offered.

Oiling of spindles by filling the bases to the top of the spout should be done while the spindles are in operation. This procedure refers to the first filling or



ATWOOD TWISTERS

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"for high achievement in the production of war equipment."

The "E" flag we fly, the "E" badges we wear, are regarded by all of us here at Atwood not only as an honor for past accomplishment but as a challenge and inspiration for the future.

Up to our necks as we are in the production of weapons and equipment worthy of America's armed forces, we are able to derive no less satisfaction from the way Atwood Up Twisters, "5B" Ring Twisters, Winders and Redraws are standing up to wartime conditions and meeting the radically changed and exacting demands of the times.

We cannot help but feel that this intensive emergency performance period, through which Atwood machines are going in the field and Atwood men and production facilities in the shop, is fitting us for even greater usefulness and service to the textile industry in the days of peace after victory to come.

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STONINGTON CONN., U. S. A.

SALES OFFICES: STONINGTON • CHARLOTTE • LOS ANGELES • MANCHESTER, ENGLAND • BUENOS AIRES
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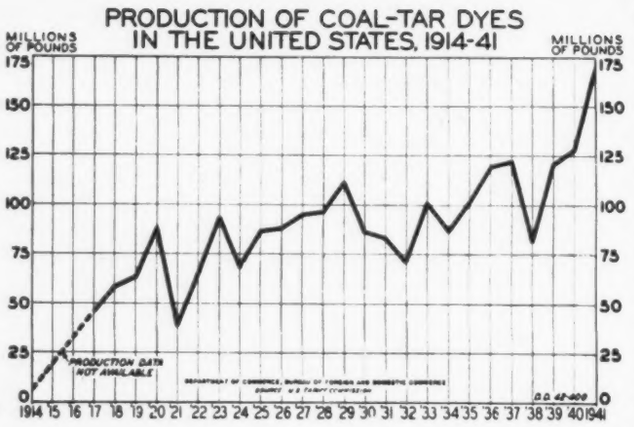
after cleaning. It will be found that, normally, the oil drops in the spout during the first 24 hr. of operation after filling. The excess oil pumped out by the spindle may be as much as 15 to 20% of the oil capacity of the bolster. Note the level found by the oil in the spout 24 hr. after the first filling and fill to this level when adding make-up. Do not overfill or add oil in such quantity that it runs over the spout.

Over-filling the spindle bases results in oil misting, wet rails, oil-soaked fly, spoiled yarn, and, in extreme cases, a greater number of ends down. Clean spindle rails and freedom from oil misting are essential to quality yarn production. An oil can that delivers a measured amount of oil in small volume is superior to the commonly used type.

The cleaning of spindles require the removal of the spindle and bolster. Wipe spindle and place it immediately over its base, as individual assemblies must always be kept intact. Clean the bolster by wiping it free of all deposit, using a small brush if necessary. Clean with spindle oil. Only use a solvent in cases of extremely heavy deposits.

Oil clean the spindle with spindle oil and place bolster on the spindle above the bolster case. Use a suction pump and remove oil from the bolster case. Flush the bolster case with fresh spindle oil, working it in and out with a syringe to loosen any deposits. Pump out the oil used for flushing bolster case. Where practical, it is good practice to blow out the case with air after cleaning and flushing. Put the oiled bolster back in its case and insert the oiled spindle. Fill to correct level with spindle oil. Where extremely heavy deposits or gummy black oil is found in bolster cases that cannot be removed by spindle oil, a solvent may be employed.



U. S. PRODUCTION OF COAL TAR DYES increased from 128,000,000 lb. in 1940 to 168,300,000 lb. in 1941, according to the Department of Commerce. This year about one-half of our total production will be used to meet military requirements. From the remainder must be supplied over own civilian needs and, as far as possible, those of Canada and Latin America. As a result, there will not be the abundance and wide variety of dyed goods formerly available, but it is believed there will be an ample supply for all real needs. Emphasis will continue to be placed on use of dyes that are fast to light and washing, for the reason that they conserve textiles and are more economical in the long run.

Do not use solvents that leave a dry surface, such as carbon tetrachloride. Such solvents remove adsorbed oil films on the metal surfaces, requiring just as much care in re-establishing these valuable working films as when they are running in a new spindle assembly. Their use also frequently leads to rusting of the bright metal parts. Such solvents have little value in dissolving gums, deposits, etc. from petroleum products over the action obtainable with petroleum solvents.

When a solvent must be employed, use a good petroleum solvent as may be used in dry-cleaning—most reputable oil companies market such solvents. Be sure to thoroughly wash and coat all metal parts with the spindle oil to be used, immediately following the application of any solvent. Be sure to remove any trace of solvent from a bolster case, as a few drops may radically affect the viscosity or body of the spindle oil.

New Dyes and Chemicals

Hygroscopic Agent

Development of a new hygroscopic agent which is expected to find a variety of applications in the textile industry as a substitute for glycerine has been announced recently by the Aktivin Corp., 50 Union Square, New York. This compound, known as Corpolin, is of neutral reation with a pH of 7.2 to 7.5, and can be used in neutral or alkaline solutions. Compared with glycerine, it is more hygroscopic, heavier, non-volatile, and non-flammable, and has a lower viscosity and higher penetrating power. Like glycerine, it is odorless, colorless, and does not discolor in storage. It is miscible with water, alcohol, methanol, glycerine, and formaldehyde. It dissolves a number of chemicals including phenol, glucose, dextrin, urea, etc. Corpolin makes gums, such as tragacanth, Karaya, and arabic swell. When Corpolin is added to solutions of glue or gelatine, it prevents them from gelatinizing, and they remain liquid or soft, according to the quantity of Corpolin added. Not only does Corpolin pick up more moisture in a given time than does glycerine under the same conditions, but it also has a higher moisture-retaining value. Corpolin is not yet on the priorities list and, therefore, is available to textile mills without the necessity for priority ratings. It is shipped in iron drums, if available; otherwise, in glass carboys containing 125 lb. net.

Castor Oil Substitute

Two substitutes for castor oil, Solinox and Solinox Z, have been announced by Spencer Kellogg & Sons, Inc., Buffalo, N. Y. These products are obtained by chemically treating linseed oil so that hydroxyl groups are attached. In this way, solubility in alcohol is attained, making Solinox and Solinox Z similar to castor oil in this property. As a result, substitution of domestically-produced linseed base oils for castor oil is possible in various industrial applications.

Transparent Plastic

A new transparent plastic characterized by its high resistance to abrasion has been announced by Pittsburgh Plate Glass Co., Pittsburgh, Pa. Called C.R. 39, the new plastic is a thermo-setting resin which is insoluble in acetone, benzol, toluene, alcohol, gasoline, or other common solvents. In its primary form C.R. 39 is a clear, low-viscosity liquid which, in the presence of a catalyst and heat, hardens into a crystal-clear solid. Fabrics can be impregnated with the resin, and cured under low pressure to form sheets or shaped objects.

The Employees The Products and The Company of SONOCO are in this war all the way

This last year we date from December 7th. What little we have done since that time we are proud of — but, what we have not done we are determined to remedy and make up for during these next twelve months—

The job to be done stretches out a long way ahead of us. It calls for more effort than we have made so far—

What are we going to do about it?

The American people and American industry will answer that question during the next twelve months, and when December 7th rolls around again SONOCO will have made some of the answers.

SONOCO MAKES *EVERYTHING* IN *PAPER CARRIERS*

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New Publications

Key to Color Harmony

COLOR HARMONY MANUAL: Color Laboratories Division, Container Corp. of America; 111 W. Washington St., Chicago; $50.00

This manual consists of 12 book-charts containing 680 movable color chips based on the Ostwald theory, plus a text, by Egbert Jacobson, explaining the use of the charts. The color chips are of the same type employed with the color harmony index described on page 100 of this issue. Each book-chart is marked on the back to indicate the colors it contains. Each chip is marked with a simple notation so that it can be removed from the chart for matching or for making color combinations with other chips, and then returned to its marked position. The manual aids in selecting harmonious color combinations and checking color matches.

Textile Tests

IDENTIFICATION OF FIBERS AND FABRICS; Research Bureau for Retail Training, University of Pittsburgh, Pittsburgh, Pa.; 80c.; 64c. each in lots of 25.

This booklet, which was prepared by the Research Bureau for Retail Training and Fisher Scientific Co., is designed particularly for use by buyers in department stores, consumers, and students. It will, however, be of interest to converters and to many mill men. Points covered are identification of natural and synthetic fibers, classification of fabrics according to fibers and "fabric families," and tests for fabric quality or serviceability. Contents of the manual were examined and approved before publication by the Multiple Fellowship on Commodity Standards at Mellon Institute. Supplementing the manual is a Tex Test Kit, priced at $5, which is useful for conducting many of the tests described.

Quick Calculator for Profit Relationships

THE BUSINESS ANALYSER: George S. May Business Foundation, 2600 North Shore Ave., Chicago, Ill.

This is a 17x22 in. nomograph comprising six correlated scales, so arranged that with any five factors being known the sixth may be discovered. The elements have to do with the essential ratios that control profits. Many business men let the difference between total costs and selling price represent payment for the use of capital. The authors of the nomograph suggest that profit might better be set up first and the difference between profit and selling price would then represent allowable costs. The six prime factors of business as indicated by the scales on the chart are: (1) invested capital; (2) net profit per cent of invested capital; (3) total fixed operating cost; (4) gross profit per cent of sales; (5) variable operating cost per cent of sales; (6) annual sales volume.

Properties and Applications of Plastics

PLASTICS FOR INDUSTRIAL USE, by John Sasso; McGraw-Hill Book Co., 330 West 42nd St., New York. $2.50.

This book is one of the few down-to-earth books on plastics for the engineer, especially the development engineer, who must investigate the field of plastics for industrial applications. Long and involved chemical formulas and calculations have been omitted wherever they are not related directly to strength and physical properties of plastics. Emphasis has been placed on the comparative properties, methods of selecting plastics for specific uses and on the proper design of the product, especially with regard to production costs and its ability to be formed easily into a molded product.

Properties of, and the industrial applications of such plastics as the phenolic classes, urea plastics, acrylic plastics, polystyrene materials, vinyl plastics, vinylidene chloride, cellulose acetate, ethyl cellulose, laminated plastics and their application to plywoods and as adhesives are discussed. A directory of trade names has been included which lists the suppliers and the molders of plastic products.

Another Consumer Book on Textiles

FABRICS, FIFTH EDITION; Grace G. Denny; J. B. Lippincott Co., 333 West Lake St., Chicago; $2.50.

Again we have a home economics teacher wading in deep water, trying to compile a set of definitions for technical textile terms and attempting to provide material on fabric identification.

This reviewer has found some of the definitions misleading and incomplete. For example, barathea is said to be: "Close silk of characteristic pebbly weave." Such a definition implies that barathea is composed of silk, although in reality it is a certain type of weave; hundreds of thousands of yards of 16-oz. barathea composed of worsted yarn have been purchased by the Government for military purposes. In the section on textile terms or definitions, the terms "hank" and "oxford gray" are among those which are loosely or improperly defined. Such inaccuracies and misleading statements are inexcusable in a book which has reached its fifth edition and been revised.

Cotton Growing and Deep-South Politics

THE RIDER ON THE BRONZE HORSE, by Harry Harrison Kroll; Bobbs-Merrill Co., New York; $2.50.

Here at last Harrison Kroll has hit his stride. After several readable novels, the scene of each being laid in the Mississippi Delta, he has produced in this one a really excellent piece of fiction. With confidence he has abandoned the beginner's share-cropper theme and has gone into a less publicized but more original field: the average middle-class, small-farm owner versus the broken down, land-poor aristocrat.

In Eli Arn the author has created a character of dual personality who wanted success and calculated to get it through hard work and an advantageous marriage. But his calculations were betrayed by that other self which was governed by his passion and yearning for the bright but common love of his youth. Through that reversion he lost all he had striven for.

The story could have taken place anywhere. The characters could have lived anywhere. But Harrison Kroll put them in his native section and mixed them well with cotton growing and Deep-South politics.

Subdividing Labor Skills

BREAKING THE SKILLED LABOR BOTTLENECK, by Eugene J. Benge, Management Engineer, National Foremen's Institute, Inc., Deep River, Conn.; $2.00.

For the executive, foreman, or vocational trainer this condensed manual is a practical study of the nature of skill and ways of using all available skills in an organization to the greatest advantage. Training is analyzed from the beginning of training to the production of a skilled operative, and prin-

Here's your plant—*in our laboratory!*

BATTERY OF STEAM KETTLES—

These jacketed steam kettles were designed to control, under laboratory conditions, the conversion of raw starches and gums into smooth printing pastes and finishing gums. Through these synchronized kettles, it is possible to make comparative conversions of different starch, gum, and resin combinations. Accurate comparisons are made possible by careful control of the rate of agitation and the amount of heat applied. The colloid mill at the extreme right of the table permits the laboratory to prepare fine dispersions for improved impregnation and finishing.

GIVING RESEARCH A CHANCE—

There is power in research when the work of the laboratory technicians and the testing equipment employed are directed toward one goal of duplicating plant results in the laboratory. Through this practical type of research, truths are discovered which stand up under the rigid requirements of successful plant operation.

Results obtained in the Rohm & Haas Sales Service Laboratory may be carried directly to the plant process. This is possible because of two factors: practical research men who know textile processing and laboratory equipment designed to duplicate mill conditions.

Let us demonstrate for you the power and practicability of Rohm & Haas textile research.

TRITONS—*Synthetic detergents, emulsifying wetting, and dispersing agents.*

RHOTEXES—*Synthetic gums for sizing and thickening.*

DEGOMMAS—*Concentrated diastatic and proteolytic enzymes for desizing.*

RHOPLEXES—*Aqueous resin dispersions for finishing and coating fabrics.*

RHONITES—*Modified urea formaldehyde resins for textile finishing.*

PROTOLIN—*Stripping agent for wool stock and piece goods.*

FORMOPON—*Reducing and stripping agent in acid systems.*

LYKOPON—*Reducing and stripping agent in basic systems.*

ROHM & HAAS COMPANY

WASHINGTON SQUARE, PHILADELPHIA, PA.

Manufacturers of Leather and Textile Specialties and Finishes . . Enzymes . . Crystal-Clear Acrylic Plastics . . Synthetic Insecticides . . Fungicides . . and other Industrial Chemicals

ciples are clearly shown on a series of simple charts.

Upgrading, overcoming skilled labor bottlenecks, requires a checking up on available skills not in use and a utilization of the highest skills of the present labor force. Work analysis, other than by direct approach of a trained psychologist, can be accomplished by descriptive analysis, and utilization of time and motion studies, according to the book. Then the new employees, or the old employees to be trained for new jobs, are trained in muscular, sensory, and thinking skills needed.

Quick training has its drawbacks the author is frank to admit. Long apprenticeship training needs more widespread acceptance in industry. However, the immediate goal is to obtain an overall high level of efficiency with new help under present conditions, and the author helps toward that end.

RUSSELL L. WHITNEY, who has been appointed sales manager of the Westinghouse Electric & Mfg. Co.'s Transformer Division in Sharon, Pa. A. C. Farmer, formerly assistant sales manager, has been appointed assistant to H. V. Putnam, Westinghouse vice-president and manager of the Transformer Division. A. P. Bender, former sales manager, has been made assistant sales manager "to afford the best possible opportunity for his complete recovery" from an extended illness.

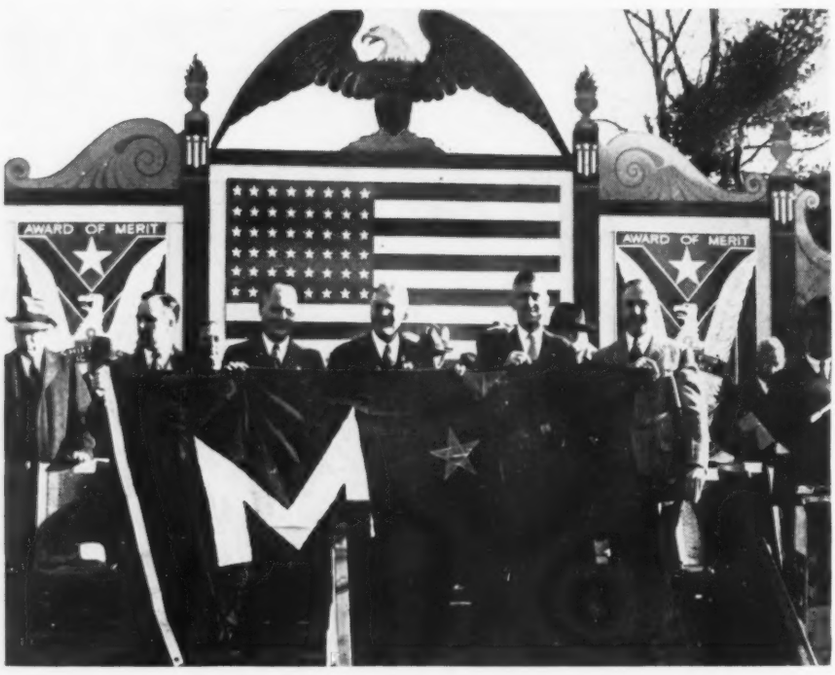
News of Suppliers

Aqua Sec Corp., New York, has appointed J. W. Stewart as sales representative in the New England territory. Mr. Stewart has been with General Dyestuffs Corp. for the last 12 years.

Burkart-Schier Chemical Co., Chattanooga, Tenn.—A. J. Kelly, chief chemist of this company has been elected chairman of the Southeast Tennessee Chemical Society, succeeding Emerson Poste. Other new officers elected are W. T. Watkins, vice-chairman; Dr. W. O. Swan, secretary-treasurer, and Dr. I W. Grote, counselor.

National Starch Products, Inc., New York—Frank K. Greenwall, president of this company, has been elected a director of the American Management Association, and appointed chairman of the Exhibitors' Advisory Committee of the Packaging Exposition, to be held at Astor Hotel, New York, April 13 to 16, under the auspices of the A. M. A.

MARITIME "M" AWARD MADE TO WHITIN



WHITIN MACHINE WORKS, Whitinsville, Mass., receives the U. S. Maritime "M" Pennant (as reported in these columns last month). At the presentation on Nov. 7 those holding the flag are (left to right): Charles E. Walsh, Jr., of the U. S. Maritime Commission; J. Hugh Bolton, vice-president of Whitin Machine Works; E. Kent Swift, president of Whitin Machine Works; Governor Leverett Salstonstall of Massachusetts; F. Eugene Banfield, general works manager of Whitin Machine Works. This Maritime "M" Pennant was presented to Whitin for outstanding accomplishment in the manufacture and delivery of vitally needed parts and fittings for ships of the Victory Fleet.

Jenkins Bros., Bridgeport, Conn., has appointed Charles C. Chamberlain, publicity manager, to be general sales manager with headquarters at the general offices in New York. Mr. Chamberlain joined Jenkins in 1929.

Troy-Whitehead Machinery Co., Charlotte, N. C., has appointed J. C. Pirkle, formerly superintendent of Durham (N. C.) Cotton Mfg. Co., and later superintendent of the Marilyn Mills, Anniston, Ala., to become its representative in the States of Alabama, Mississippi and Georgia.

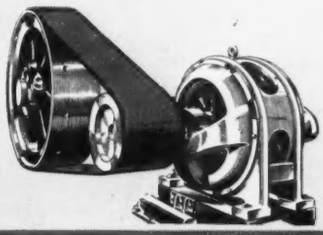
Chase Brass & Copper Co., Waterbury, Conn., has elected Charles E. Hart, lately executive vice-president, to be president, succeeding Frederick S. Chase, who retired Oct. 2 at the age of 80.

Chain Belt Co., Milwaukee, Wis., has appointed George D. Gilbert as general manager of Baldwin-Duckworth Division, Springfield and Worcester, Mass. William H. Gates has been made works manager of the Baldwin-Duckworth Division.

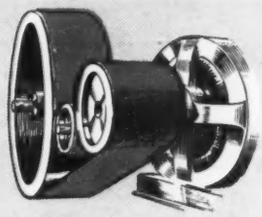
General Electric Co., New York, N. Y., has appointed J. O. Wetherbie as manager of the GE wiring materials district No. 2, with headquarters in New York. This assignment is in addition to Mr. Wetherbie's present responsibility as special representative coordinating the activities of the GE appliance and merchandise department and other departments of the company on large Governmental, commercial, industrial and residential construction projects. GE has ap-

REEMAY

Used for longer life on pivoted-motor-base, idler, high-speed, and open drives; small pulleys; overloads; shockloads; and short centers. Resistant to boiling water, oil, acid fumes, dry heat to 365°, alkalies, dust. Chrome Retanned. Highest tensile strength. Greater transmitting capacity. Practically free of static electricity. Specially curried. Hand processed by skilled workmen.



GAM-OIL



Used for longer life on idler, high-speed, and open drives; small pulleys; overloads; shockloads; and short centers. Resistant to oil and heat. Tanned in Gambier by our long-time process. Greater tensile strength than Oak Tan. High transmitting capacity. Very flexible. Specially curried. Hand processed by skilled workmen.

HERE'S YOUR BELTING

FOR EVERY PROBLEM OF GREATER TEXTILE *Production*

BARNES *Combination* BELTINGS

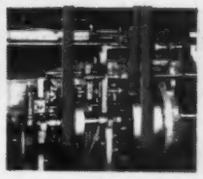
REEMAY AND BARNES **OAK**

For condenser drives, eccentric drives, mule drives, spinning-frame drives, Gaulois pulleys, and generators. Reemay ply goes next to pulley for high coefficient of friction; oak ply on top, for weight and firmness.

MINERAL TAN AND BARNES **OAK**

For drives in wetness, excessive moisture, or high humidity conditions where shipper or flange pulleys are involved. Mineral Tan ply goes next to pulley to withstand moisture without slipping or stretching.

GAM-OIL AND BARNES **OAK**



Specifically used on overloaded drives for immediate starts with no slipping or stretching. Gam-Oil ply, which has the highest coefficient of friction of any of our leathers, goes next to pulley. This belt is especially adaptable to picker drives which have changing loads.

All Barnes belting is put together throughout with water proof cement and made strictly from first-quality center stock. All belting is prestretched, run in, and tested. Special treatments against mineral oils, steam, acid fumes, etc., are given on request. Write for thickness schedule and price list.

HENRY K. BARNES COMPANY • SALEM, MASSACHUSETTS

BARNES THE *Textile Leather* HOUSE

SINCE 1876

Where unusual knowledge of Leather is combined with long years of Textile experience

APRONS—BELTING • FLAT • ROUND • & ACCESSORIES—STRAPPING

GERARD SWOPE, president of General Electric Co., New York, has been selected as the sixth recipient of the Hoover Medal, with the following citation: "GERARD SWOPE, engineer and distinguished leader of industry, ever deeply interested in the welfare of his fellowmen, whose constructive public service in the field of social, civic and humanitarian effort has earned for him the Hoover Medal for 1942." The medal will be presented to Mr. Swope during the winter convention of the American Institute of Electrical Engineers in the week beginning Jan. 25, 1943.

pointed J. L. Townsend as assistant manager of sales, Fractional-Horsepower Motor Section, of GE's Motor Division. He joined the company in 1925 as a student engineer at the Ft. Wayne Works. K. R. Van Tassel has been appointed manager of sales of the newly formed Integral-Horsepower Motor Section of GE's Motor Division.

Ashworth Bros., Fall River, Mass., have appointed George A. Davis as manager of the woolen and worsted department of their Worcester and Philadelphia plants — the American Card Clothing Co.

Reliance Electric & Engineering Co., Cleveland, Ohio, has leased the plant at present occupied by the Stoker Division of the Pocahontas Fuel Co., which is in close proximity to Reliance's No. 2 plant. Funds for the new facilities and equipment will be supplied by the Navy Department.

Mathieson Alkali Works, New York, N. Y., through R. J. Quinn, is stressing the shortage of cylinders for chlorine, ammonia, carbon dioxide, and other compressed gases, and urging all users and transportation companies to cooperate in returning the containers to the producers. "Shippers of cylinders should cooperate with the transport companies in arranging shipments that can be handled economically," said Mr. Quinn.

American Viscose Corp., New York, reports, subject to adjustment, net earnings of $1,516,723 for the quarter ended Sept. 30, 1942, compared with $2,090,464 for the quarter ended Sept. 30, 1941. Earnings for the nine months' period ended Sept. 30, 1942, were $3,939,528 compared with $5,465,665 for the corresponding period of 1941. The provision made for Federal taxes on income, $11,218,000, for the nine months' period ended Sept. 30, 1942, compares with $4,048,000 for the corresponding period of 1941. Net sales for the quarter ended Sept. 30, 1942, were $22,711,877 compared with $20,248,034 for the corresponding quarter of 1941, while those for the first nine months of 1942 were $67,143,921 against $58,378,162 for the first nine months of 1941.

American Engineering Co., Philadelphia, has retained Prof. E. L. Midgette as consultant for the company. He remains, however, at his post as Professor of Machine Design at the Polytechnic Institute of Brooklyn.

Morse Chain Co., Ithaca, N. Y., has appointed Earl Wesselhoff as manager of its Boston Branch to succeed C. L. Pratt, Jr., who has resigned. Mr. Wesselhoff has been with the Detroit plant for the last 22 years.

Reeves Pulley Co., Columbus, Ind., has placed Homer C. Garner in charge of its Atlanta, Ga., office. Mr. Garner is a native of Georgia, but has been

H. C. GARNER, now in charge of Atlanta office of Reeves Pulley

for nearly seven years connected with Reeves New York branch as sales and service engineer. At Atlanta he replaces W. Clark Erwin, who is now lieutenant (j.g.) in the aviation division of the Navy.

International Minerals & Chemical Corp., Chicago, Ill., has begun construction of a plant in the vicinity of Augusta, Ga., for the manufacture of magnesium sulphate for the textile and allied industries. This company is branching out in chemical manufacturing and expects to have sufficient capacity in its southern plant to supply the growing industry in this section. The plant is expected to be in production by next February.

Allis-Chalmers Mfg. Co., Milwaukee, Wis., has appointed H. P. Binder as manager of the centrifugal pump department. Mr. Binder had been assistant manager of the hydraulic department, in charge of centrifugal-pump

H. P. BINDER now manager of Allis-Chalmers centrifugal pump department.

sales and engineering, since 1940, and associated with Allis-Chalmers pumps for the last 30 years.

Republic Filters, Inc., (formerly American Seitz Filter Corp.), Paterson, N. J., has acquired a second plant in Paterson, which is devoted to the manufacture of Republic filter sheets and filtering materials.

Farrel-Birmingham Co., Inc., Ansonia, Conn., and Buffalo, N. Y., has appointed Edward S. Coe, Jr., as manager of its New York office.

Book Dramatizes Unusual Industrial Career

The unusual record of Franklin G. Smith, who this year celebrated his 50th anniversary as head of the Osborn Mfg. Co., Cleveland, Ohio (referred to previously in this department), is the basis of an interesting book by Julian Street, published by Denison University Press, Granville, Ohio. The book treats of the changes, social and industrial, which have taken place during Mr. Smith's lifetime, as the title—"Men, Machines and Morals" indicates. It treats also of the drama and romance in the growth of the Osborn company under Mr. Smith's guidance.

Ryerson Commemorates Its 100 Years with Booklet

"100 Years of Peace and War" is the title of a handsome booklet issued by Joseph T. Ryerson & Son, Inc., Chicago, in commemoration of their 100th anniversary. This event has been previously mentioned in this department. The commemorative booklet is dramatically illustrated with sketches of the events or circumstances over the last 100 years in which steel manufacture and products played an important part. It closes with a year-by-year chronology for the same period which gives a brief history of industrial America.

AIR — against WATER

Rising and falling with the waves . . . men on a rubber raft . . . human lives snatched from the sea . . . by a thin layer of inflated rubber.

Important? Yes. It's important that the thin sheets of rubber be kept free of cracks and blisters, that the raft unfold easily, that it be *safe* when it's needed.

That's why rubber life rafts are processed in special air conditioned rooms . . . to make the rubber tough and long-lasting. *Room temperature and humidity are maintained more exactly than ever.*

To do jobs like this, air conditioning equipment must be more precise, more flexible, more compact. Required "climates" must be reproduced faithfully . . . wherever and whenever wanted.

General Electric has already taken an outstanding part in developing this new kind of air conditioning for war industries. After the war, *all* users of air conditioning will benefit from the lessons we have learned in meeting these stringent war requirements.

More people will enjoy air conditioning because it will be more compact . . . more economical. Cars will have it. Also planes and boats. Small stores, as well as large, will want it to increase sales, to keep goods fresh. Factories will demand it as an aid to production.

The place to turn for this new equipment will be General Electric . . . a logical source of heating, refrigeration, air conditioning, and heat transfer equipment of all kinds. Turn to G-E.

Air Conditioning and Commerical Refrigeration Department, Division 427, General Electric Co., Bloomfield, N. J.

Air Conditioning by

GENERAL ELECTRIC

FREE FOR THE ASKING

Readers interested in literature reviewed on this page may secure copies by writing to Textile World, 330 West 42nd St., New York, giving their company connection, title of item desired, and date of issue in which it was reviewed.

"Warp Preparation Comb and Reeds" is the title of a 20-page booklet recently issued by Steel Heddle Mfg. Co. Some of the topics covered are the function and importance of a guide comb or reed, the need of detailed knowledge of the comb required, warp preparation combs and reeds, spring expansion combs, long-link positive expansion combs, fan reeds, swing combs, fan reed holder, warp leasing device for holding the split rods and the hook reed.

Humidification in Kilburn Mill is discussed in a two-page article appearing in issue No. 4 of *Armstrong Trap Magazine*, published by Armstrong Machine Works. Photographs showing humidifying apparatus in the picker, card and spinning rooms are included as a part of the article.

Overhead traveling cleaners and also humidification control in a cotton spinning room is illustrated in a photograph contained in the September issue of *Parks' Parables*, published by Parks-Cramer Co.

Textile mill executives interested in the part that some textile supply houses are contributing to the war effort should read the October issue of *The Houghton Line*, published by E. F. Houghton & Co.

Two new handbooks dealing with finishing have been released by Bernard Color & Chemical Corp. "Bernamine Colors on Piece Goods," is the title of a 21-page booklet with 80 colored illustrations of cotton piece goods, accompanied by wool-warp cotton tilling combination cloth illustrating union effects. Floaters of silk, acetate rayon, viscose rayon are also illustrated along with fastness properties being listed. The 37-page booklet titled "Logwood and Related Natural Dyes," contains much valuable information for users of logwood and other natural dyes. Practical methods of application on wool, cotton, silk, Nylon, Aralac, leather, paper, bone, wood and numerous other items are contained.

A price list of textile tests on fibers, yarns and fabrics has been issued by Hatch Textile Research. The various tests listed include both fabrics and yarns, serviceability tests, material tests, construction tests and knit goods and hosiery tests.

A handbook on Phenolite Laminated Bakelite has been issued by National Vulcanized Fibre Co. This handbook contains data on the use of laminated bakelite, its properties and the machining of such products. Also contained is a list of the various uses of this material in the textile industry.

Maintenance of diesel engines used about textile plants, either for power plant purposes or for motive equipment, is discussed in a booklet from the standpoint of lubrication, replacement of worn parts, etc. This booklet is offered by Caterpillar Tractor Co.

Five bulletins covering textile processing machinery have recently been issued by Proctor & Schwartz, Inc. Bulletin 184 describes a mixing picker and contains data on dimensions, speeds and capacity. Bulletin 201 covers the Proctor dryer for bleached cotton linters. A description of the impact type of dryer is contained, along with photographs showing various features and parts. Bulletin 202 describes the Proctor dryer for redrying bleached cotton linters in nitrating plants. Specifications of this type dryer are contained. The impact type dryer for cotton, rayon and similar fibers is described in Bulletin 203. This bulletin illustrates many of the features of this type of dryer. Essential information such as capacity, heaters, air filters, etc. is contained. Bulletin 204 describes the impact dryer for wool stock and shredded rags. Photographs showing the features of this type of dryer are contained.

Lubrication of ball and roller bearings is covered in 32 pages, along with designs, formulas, graphs and other technical data in a booklet entitled "A Guide to Better Bearing Lubrication," distributed by SKF Industries, Inc. Subjects treated include the functions of lubrication, oil lubrication, recommended viscosities, oil supply systems, oil bath, circulating systems, spray or mist lubrication, wick feed, oiling with compressed air, grease lubrication, and the protection of idle machinery.

Motor fitness requirements are covered in a new 40-page illustrated bulletin GED-1017, titled "Motor Fitness Manual." and issued by General Electric Co. The bulletin contains much information concerning maintenance and service of old and new motors, switching motors from one job to another, and equipping old machines with new motors.

Lubrication equipment for industrial machinery is described in a 50-page catalog called "Alemite," issued by Alemite Division, Stewart-Warner Corp. Lubrication equipment available on priority orders is described in this catalog.

A poster suitable for hanging in locker rooms is obtainable from Penn Metal Corp. of Penna. This 19 x 25 in. black and red poster is furnished for the benefit of employees and instructs them in the proper maintenance and care of their steel lockers.

Identification of white metals is one of the many interesting articles contained in the Spring-Fall edition of *Inco*, published by International Nickel Co. A table included in this article should be of great assistance to mill maintenance men in identifying white metals and alloys.

Wood shelves and bins are described in Bulletin 1705, issued by Lyon Metal Products, Inc. Wood is replacing steel for the duration in the manufacture of bins, shelf boxes and lockers for use in industrial plants.

Temperature control within certain zones or sections of a building may be held according to individual requirements with the use of the compensated control described in a leaflet issued by Barber-Colman Co. It is stated that this system eliminates overheating encountered with ordinary control systems.

A synthetic rubber-like material, called Tygon, is described and technical and engineering data given as to its industrial uses in Bulletin 1620, issued by The United States Stoneware Co.

Reduction drives with a fixed speed reduction and suitable for use on textile equipment are described in a folder titled "American Reduction Drives," issued by the American Pulley Co. This speed reduction unit has a fixed speed ratio of 13 to 1 and mounts on the shaft extension of the driving machine, taking only little more room than an ordinary pulley. Photograph showing numerous textile installations are contained in the bulletin.

Industrial switching equipment of the diesel-electric type is described in Bulletin GEA-3598 issued by General Electric Co.

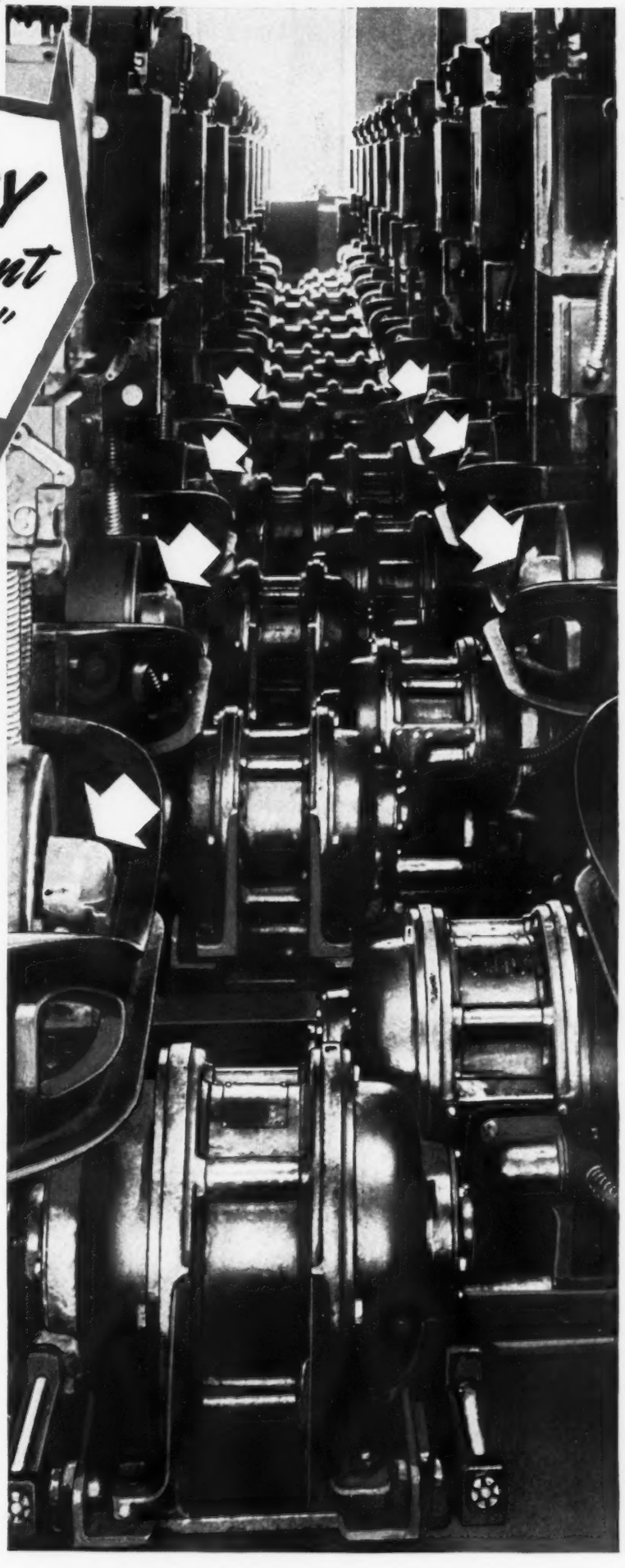
Cotton spinning frames in the Newberry Cotton Mills are shown in a photograph contained in the *Service Factor*, second edition, 1942, published by Sinclair Refining Co.

Shipping estimator for air express is offered by Air Express, Division of American Express Agency, Inc. This handy estimator permits the approximate cost of shipments to various points in the United States to be determined quickly. The estimator covers distances from 200 to 2,500 miles and applies for packages varying in weight from 1 lb. to 1,000 lb.

Infra-red drying equipment for use on tenters, singers, palmers, etc. is contained in a recent bulletin issued by Red-Ray Manufacturing Co.

Electronic principle of control, especially its applications to temperature controllers, is discussed in the September issue of *Wheelco Comments*, published by Wheelco Instrument Co.

This POWER ALLEY Was A Constant "Headache"



The "power alley" in this mill was eating up money before Fafnir Ball Bearing Pillow Blocks replaced plain bearings on these high-speed spinning frames. Lubrication cost was excessively high – and due to liberal lubrication, leakage of oil on expensive belting caused it to wear out long before its time. Much yarn was lost as the result of thrown oil. Besides, yarn residue, dripping oil and friction made a perfect set-up for a fire.

The substitution of Fafnirs reduced starting and running torque on the high speed shafts and cut power loss to a minimum. Because the Fafnir units required lubrication only twice a year, belt slippage and belt wear were practically eliminated – saving power, labor and money. The clean running Fafnirs prevent spoilage of yarn.

This "turning point" to power conservation and the reduction of operating costs and trouble was quickly and easily made. Simplified installation made possible by the Fafnir Wide Inner Ring Bearing with exclusive Self-Locking Collar – no machining, shaft shoulders, or lock-nuts required – eliminated lost production time.

Have you considered what the substitution of Fafnir Ball Bearings might do for your power wasting drives? The Fafnir Ball Bearing Company, New Britain, Connecticut. Branch Offices: Atlanta . . . Birmingham . . . Boston . . . Charlotte . . . Dallas.

FAFNIR

Ball Bearings

THE BALANCED LINE —
FOR ORDNANCE, AIRCRAFT AND INDUSTRIAL MACHINERY

Photomicrograph of Bemberg yarn (magnified 5000 times) courtesy of Wm. M. Grosvenor Laboratory, Inc.

WINDING "NO-TWIST" FILAMENT YARNS . . .

A JOB FOR UNIVERSAL PRECISION WINDERS

Each new synthetic yarn has different winding characteristics, yet each is being wound successfully by the Universal Precision Winder.

A notable achievement is the winding of Bemberg, a photomicrograph of which is shown above.

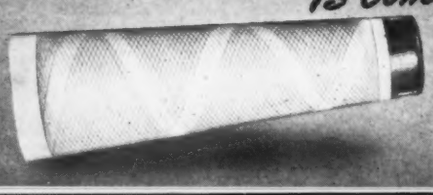
In the Bemberg plants, flexible No. 50 Precision Winders have been called upon to wind multi-filament yarns of the finest deniers that have ever been put up on cones . . . yarn containing the largest number of filaments . . . yarn that is sometimes manufactured without twist.

Prime reason why No. 50 Winders were selected for precise-winding Bemberg is the opportunity to get an extremely delicate adjustment of pressure and tension. Universal Engineers, working with the producers of Bemberg, have demonstrated that yarns containing filaments as fine as cobwebs can be wound on No. 50 machines under perfect control.

Thus the original quality of the yarn is protected, and the desired performance can be expected on knitting machines, filling winders or in the warping creel.

More Than 90% of All Synthetic Yarn Is Coned on Universal Precision Winders

LEESONA REG. U. S. PAT. OFF.



UNIVERSAL WINDING COMPANY

Providence Boston Philadelphia Utica Charlotte Atlanta

THE OVERSEERS' CORNER

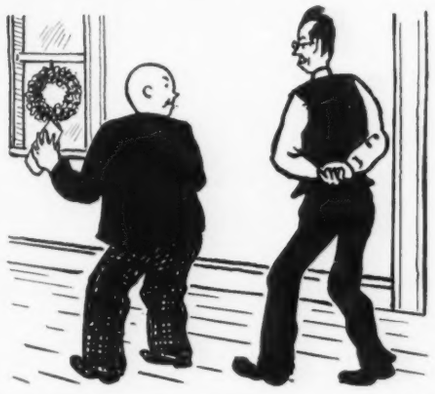
XMAS PRESENTS FROM THE WORKERS

A PETE AND BILL DISCUSSION

"Say, Pete, what stand are you going to take on allowing your workers to buy you a Christmas present this year?" queried Bill as they started up the hall to the superintendent's office. "I'm in favor of letting mine give me a present as usual."

"You asked for it, Bill," returned Pete, seriously, "so I must tell you I have never been in favor of receiving presents from operatives.

"Of course, human nature being what it is, I like appreciation, and the spirit of the thing," went on Pete with a smile, "but there are many objections to such a practice. First, it is a thing that can grow out of hand and be misunderstood. Many people appreciate the spirit of the thing but others may react differently. A few will not want to contribute for reasons of their own, and pressure may crop up in the collection of funds. Others may be embarrassed, and still others may expect some favor from the boss. Besides, we have a lot of new employees that probably see no reason for spending their money on presents for us. With most of our folks paying income tax, I say let them save their money for taxes or bonds."



"What stand are you going to take?" queried Bill

"Come now, Pete," retorted Bill sourly, "you're not usually such a killjoy! You're just trying to find trouble. I'm for letting my folks alone to do as they like about presents. Besides, it is a very old custom that was kept up during the depression, and now with prosperity here no one will miss the small amount given."

Should overseers allow operatives to give them Xmas presents?

Letters from Readers

Pete's Not So Smart

"The Third Shift Bugaboo" (Pete & Bill, Oct., 1942)

Editor, Overseers' Corner:

In the October issue of TEXTILE WORLD, Pete and Bill got into it over the third shift question. Pete's argument sounds very sweet indeed from a theoretical point of view, but in actual practice it sours considerably. Employees are not prone to fall for a "dare" regardless of all the sweet talk poured out to them when it comes to working the third or graveyard shift. At least, not if they possess skill other plants can use. Pete should remember people are not as gullible as they used to be in dad's day. Moreover, with a third shift, most machinery does not get the care it should due to too many fingers in the pie, to say nothing of the added wear and tear on the important functioning parts. Bill is right, most graveyard shifts cost fifty per cent more than they are worth in the long run of affairs. Another thing, the turnover of help on a third shift is usually so costly it automatically eliminates itself.

K. R. BARKER (*Ga.*)

He Works Any Shift

"The Third Shift Bugaboo" (Pete & Bill, Oct., 1942)

Editor, Overseers' Corner:

There should be no "Bugaboo" whatever in the third shift idea, in October TEXTILE WORLD, especially in these strenuous times when the whole world is deep-dyed in an awful conflict—even if it takes the third shift, and every possible cooperation that could be given to win an everlasting and eternal peace.

Every plant in war production, like Pete, should talk and promote a third shift, and the employees should certainly be willing to give their united cooperation in the supreme war effort. Bill should not even advance such an argument when the battle for freedom must be won at any cost, and as early as pos-

Employees' Manual Wanted

TO ASSIST us in a study we are making, we shall greatly appreciate it if readers will send us a copy of any manual or other material which their company has issued for the purpose of acquainting employees — particularly new employees — with their job and with company policies relating to transfers, promotions, health and safety, and other employer-employee relations. Kindly address such material to Technical Editor, TEXTILE WORLD, 330 West 42nd St., New York.

Overseers' Practical Helps

CONTRIBUTIONS to the letters and practical helps in "The Overseers' Corner" are paid for when published without regard to length. We use letters (not over 200 words) discussing material on these pages or any other pertinent matter whether of mechanical, managerial or just plain human interest. Those who contribute practical helps or kinks which are published (not over 500 words) will be paid additional for an appropriate sketch to illustrate their device. It is not necessary to submit finished drawings. Contributions of greater than specified length may be given consideration as articles. If these pages interest you —contribute something to them to interest others. Address Editor, Overseers' Corner, Textile World, 330 West 42nd St., New York.

sible. There should be a courageous, solid front in that direction.

Roll up your sleeves boys everywhere, in every plant for a universal and lasting world peace in 1943—especially for good old America.

PVT. ERNEST WEBB
Ward F-12, Station Hospital
Ft. Leonard Wood, Mo.

★ ★ ★

A Suggestion Box That Works

Popularity of the employees' Suggestion System of Celanese Corp. of America was disclosed in a survey showing that close to 40,000 suggestions were submitted by employees at the company's two yarn producing plants in Maryland and Virginia during the last year and a half and more than $21,000 has been distributed in extra compensation as a result during the same period.

Celanese Corp. of America instituted the program in January, 1941. In the first six months of the current year the number of suggestions received showed an increase of almost 50% over the corresponding period of the preceding year. Bonuses to employees range from $5 up to several hundred dollars have been paid for ideas that will increase plant efficiency.

A high percentage of the suggestions submitted are deemed worthy of a cash award. At the outset 8% of the suggestions were adopted, but now the figure is running around 12%.

To assure impartial consideration of every idea submitted no name is affixed to the suggestion. Instead, ideas are written on serial numbered blanks having correspondingly numbered stubs which, when removed, act as the suggestor's receipt. After considering all suggestions the suggestion committees at the plants publish weekly bulletins showing by serial numbers those ideas adopted and rejected. Thus, the identity of persons submitting suggestions is not known until they present themselves for their cash awards.

Conditioning Rayon

We had been running 100 den., 20-turn, rayon with great success. When we switched to 35-turn yarn we encountered trouble. It seemed that no matter what we did it was impossible to keep the unruly yarn from snarling. This was the source of many seconds and the cause of press-offs in knitting that piled up to a prohibitive amount of defective fabric. Also, production dropped at an alarming rate, but we were no nearer to a solution than we had been at the start.

Finally, we decided to handle the rayon like silk and placed enough rayon in a humidifying room to operate one machine. We adjusted the thermostat to a 70% r.h. This yarn was left in the humidifying room for 48 hr. In the meantime we had placed water in the pans under the moistening boxes on the machine. The moistening boxes were kept tightly closed at all times. This method of handling proved to be the remedy for our troubles; the press-offs were decreased about 60%, and we run all 35-turn yarn in the same manner.

The humidity sets the high twist in the yarn and prevents it from whipping away from the cone as the sinkers feed it to the needles. Moreover, this dampening of the rayon has a tendency to produce a much better fabric without a lot of unnecessary adjustments on the machine. K.R.B. (*Ga.*)

Shuttle Feeler Gage

Sometimes difficulty is encountered on the Northrop loom to get the shuttle feeler to work correctly when used with the Stafford thread-cutter. A handy gage for setting this feeler can be made from a 1 in. length of ⅜ in. square iron or key-stock and from 3 in. of ⅛ in. strap or flat iron brazed together to form a feeler gage as shown in Fig. 1.

In setting the feeler, the spring connecting the feeler and thread-cutter is disengaged, the latch depressor loosened, and the lay pulled forward until the latch touches the bunter. The feeler stand is loosened, the gage placed on the lay-end plate and the feeler pulled down on the gage as illustrated in Fig. 2. This

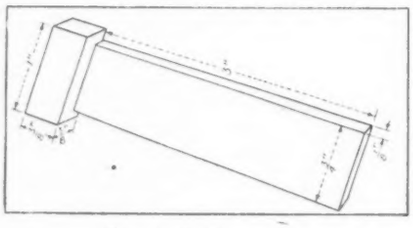


Fig. 1 Feeler gage.

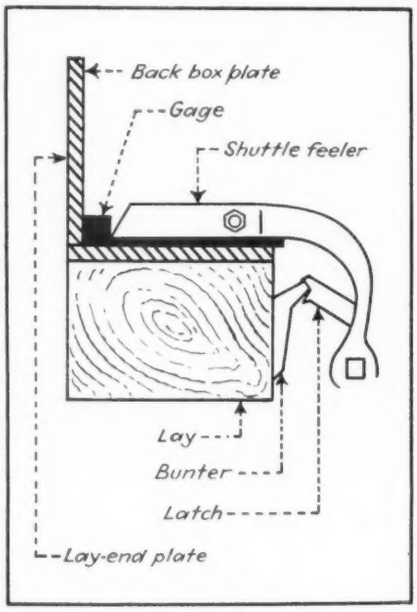


Fig. 2 Feeler gage in place for adjusting the shuttle feeler.

gives the feeler a clearance of ⅛ in. on the bottom and ⅜ in. at the back. With all connections in place this setting should give maximum protection to the shuttle and the loom should work easily and freely when the filling change takes place. W.C.W. (*Ga.*)

Removing Tarnish from Monel Metal Dyeing Equipment

Monel dyeing equipment which has been exposed to tarnishing by sulphur colors may be readily cleaned, as described in an article appearing in a recent issue of *Nickelsworth*, published by International Nickel Co., Inc., through immersing or "pickling" in a solution made up of the following:

1 gal. water
2.2 gal. nitric acid (38° Be.)
1.5 gal. sulfuric acid (66° Be.)
0.2 pd. common salt

This solution should be used at room temperature. In its preparation, the salt should be added last to the acid mixture so as to avoid acid losses or fuming. This solution should remove the sulphur tarnish adequately in three to five minutes. If less rapid cleaning is desirable,

the nitric acid content of the pickling solution should be decreased to about half the given value.

The pickling solution described is corrosive to metals and should be mixed and used in an earthenware crock. The Monel tubes or spindles to be cleaned in the solution may be placed in and removed from the crock with hooks bent from Monel wire. The tubes and spindles should be thoroughly flushed with cold water after cleaning.

Human Relations in the Mill

Eastern-Carolina STA discusses safety, employee training, and absentee problems

DEALING WITH WORKERS and foremen so as to develop safe practices and better-satisfied and loyal employees was given first place in the discussions held by the Eastern Carolina Division of the Southern Textile Association held in Durham, N. C., Oct. 31. Training new employees, and the experience of a mill using Training Within Industry methods were covered (see page 72). Two members demonstrated the TWI method of job instruction as compared with hit-and-miss methods. Interesting methods of inspecting and caring for machinery were also brought out.

Safety is largely dependent upon good human relations, and not upon the machine, according to E. C. Horner, overseer of Oxford (N. C.) Cotton Mills. Safety guards can be put around dangerous machinery to eliminate the hazards of operation, but it is impossible to apply a safety device to a worker. For this reason, most of the responsibility for safety rests on the shoulders of the foreman, with human relationship as the connecting link with his co-workers, and those under his supervision. Mr. Horner expressed the view that safety is everybody's business; and, therefore, it is necessary for the worker to share the responsibility for safety. Know your men, and know your business. To know people, first understand their problems. Learn to see things as they do, and you can appeal to them. Help people to adjust themselves to the rapidly changing conditions. Make new approaches and appeals to workers, because old approaches of a few months or a year ago will not interest them today.

Mr. Horner told of his company's methods of training new workers in safety. Many new workers were observed to take the safety side of their job lightly. A policy was adopted whereby the superintendent gives each employee safety instructions, explains why the mill has a safety program, and discusses how it can benefit the worker directly. This human approach creates in the worker an interest in safety, and he takes it seriously. The worker is then sent to the overseer, who reviews the superintendent's instructions, and actually points out the places where injury can occur.

One of the most difficult problems is to get old employees to realize the importance of safety. Interest was stimulated in one mill by the organization of a safety committee, from the rank and file of the employees, to investigate accidents; and to appeal to the worker when the superintendent or overseer could not impress them. Accident engineering courses sponsored by the Federal Government are being taken advantage of by 12 men from Rosemary Mfg. Co., T. W. Mullen, superintendent, told the group.

HOW TO KEEP WORKERS SATISFIED and prevent absenteeism is a perplexing problem, stated G. E. Moore, superintendent, J. M. Odell Mfg. Co., Bynum, N. C. Absenteeism on Monday, and the day after payday is particularly bad. In spite of more money, better housing, and other conveniences, many people are not quite satisfied. Other members explained that some mills on war contracts are having trouble with workers who will work only about four days because they make as much in four days as they formerly made in six. One member suggested that getting workers to feel that they are contributing to the war effort and impressing them with the importance of staying on the job can reduce absenteeism.

Keep foremen and overseers busy to keep them satisfied, suggested D. F. Lanier, superintendent of Oxford (N. C.) Cotton Mills. In the large mill this is not such a problem, but in the small mill foremen have often worked on machinery as combination men, and they are not allowed to devote much time to mechanical work now. Giving them more responsibility of a supervisory nature helps them keep busy.

Training new employees is a handicap to old workers, stated M. R. Harden, superintendent of No. 4 Mill, Erwin Cotton Mills Co., Durham, N. C. Accordingly, at his mill practice now is select an instructor particularly qualified for teaching a job. When a learner reaches a point where he can operate a certain number of spindles or looms, he is placed on a regular assignment with a spare hand to help for two or three weeks until the new worker can run the assignment. Labor turnover among learners is hard to control, although a reasonable percentage of learners stay on the job.

Training Within Industry job instructor training is being used at Rosemary Mfg. Co., and 83 people have been trained as job instructors to date. B. F. Ryals, overseer at Rosemary, demonstrated job instructor training methods. Operations by TWI methods are taught both by telling and showing how. The correct approach to the worker just beginning to learn a job is emphasized.

INSPECTING, REPAIRING, overhauling, and oiling must be done carefully, and systematically to conserve supplies was the consensus. One member has an inspector in the weave room check a loom thoroughly and write down everything he finds wrong. One copy is kept in the inspector's book, and a carbon copy goes to the overseer to show that the work has been done. On the next inspection if the job has not been done as reported, some action is taken. Each loom is inspected about every three weeks. Fixers are requested to take broken parts to the supply room before getting a new part. The overseer or assistant overseer inspects each major part before it is discarded. Supply room men have experience enough to know when a part can be repaired, and they are required to take it to the shop for repair. A record is kept of every piece a fixer gets, and the record goes to the superintendent's office each month. When a fixer uses too many parts, the reason is sought.

One mill with overhead shafting uses a pump-type can with a 9-ft. gooseneck spout to oil the shafting. With this device, one man can now oil the shafting in one-third the time formerly required. Another mill has installed special vibration-feed grease cups on the main card bearings that reduce the frequency of oiling. Many machines have been speeded up because of new requirements, and inspecting and oiling schedules must be adjusted to meet the new requirements or the machines will wear excessively.

E. C. Horner of Oxford Cotton Mills was selected as a member of the executive board to replace J. E. Shaw of Rosemary Mfg. Co., who has been called into the Service. D. E. Long of Oxford Cotton Mills is chairman. J. T. McAden replaces Ellis D. Royal as secretary.

FIXING HOSIERY MACHINES

Circular Machines—Chapter XVIII—(Continued)—Split-Foot Machine

By JULIAN W. HUGHES

CYLINDER, NEEDLE AND JACK MECHANISM in the split-foot machine is basically the same as in other models of Banner machines. A cross-section of the upper half of a cylinder, Fig. C48, shows the position of the long and short butt needles and arrangement of needles and jacks for knitting the high spliced heel, instep and foot. The long butt needles on the left hand half of the cylinder are fed from the auxiliary side during the reciprocal knitting for the foot portion. The short butt needles on the other half of the cylinder are fed from the regular yarn fingers and are used to knit the heel splicing, heel and toe, and sole during reciprocal knitting.

The heel pocket of modern split-foot work is knitted on six needles less than half the circle and not on half of the short butt needles. The sole is knitted on 32 needles less than half the circle. Lower half of the cylinder is shown in Fig. C49 which illustrates the arrangement of long and short butt jacks. When the machine is knitting the heel, the long butt jacks at each end of the half circle are raised by cams that push the needles in the same grooves to a level with the inactive half of the long butt needles. Hence, when the heel pocket is completed the corner of the core is three wales from the middle of the side of the foot. While the machine is knitting the heel, the long butt jacks at each end of the half circle are raised by cams that push the needles in the same grooves to a level with the inactive half of the long butt needles. Hence, when the heel pocket is completed the corner of the core is three wales from the middle of the side of the foot. While the machine is knitting the sole which has a suture seam dropped 16 needles from the middle of the foot on either side, all the jacks, including the long butts *33* and *34*, Fig. C49 and the short butts *31* and *32*, are raised to elevate their corresponding needles to the level of the long butt needles. Since the regular feed side which supplies the yarn for the sole feeds at a lower level than the needles over the jacks in the group *31* and *32*, the hooks of the latter needles do not receive yarn from the regular feed, but are fed by the auxiliary feed along with the long butt needles.

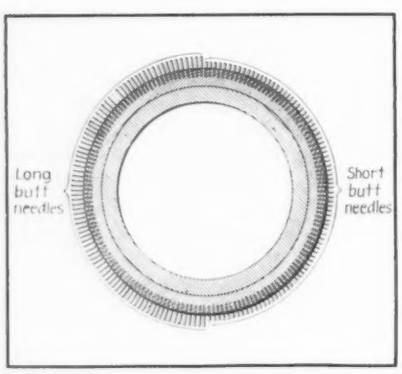


Fig. C48. Upper half of cylinder holding the needles.

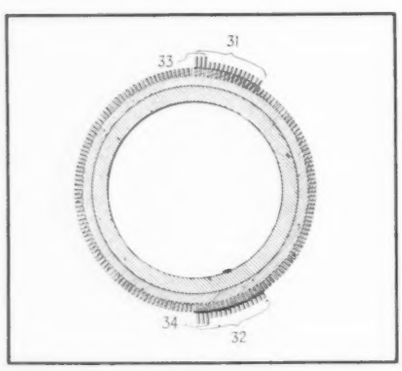


Fig. C49. Lower half of cyilnder holding the jacks.

CIRCULAR MACHINES—Chapter XIX—Needle Reverse Plating

REVERSE PLATING to produce pattern effects is accomplished by the manipulation of specially constructed sinkers. This mechanism was considered in chapter XVI of this series. Another method of reverse plating, known as needle reverse plating, consists of deflecting the upper portion of the needles radially inward. This method of reverse plating is embodied in Standard-Trump Brothers Model 80W Shog machines, and Scott & Williams Model HH-NRP machines.

Pattern jacks, needle-elevating jacks, and the mechanical means for actuating them on the needle reverse plating type differs very little from the spiral float stitch machine. What difference exists is principally in the mechanism for deflecting the needles. This chapter will deal with the maintenance of the needle deflection attachments as applied to the Standard-Trump Brothers machines.

The needle deflective principle of reverse plating utilizes pressers over each needle near the top of the cylinder. The presser is a little more than a third the total length of the needle, having a butt at the lower end similar to the needle butt. The grooves are milled deeper at the top of the cylinder to permit the needle to be flexed inward; about a third of the presser is over the deep part of the groove, and a portion of the inner edge is cut away so there will be a fulcrum or rocking point when the presser jack contacts the shoulder on the outer edge of the presser.

The lower part of the sinker dial is slotted radially to receive the presser jacks. These jacks are, of course, in line with the pressers and needles, and deflect the latter when the shoulder of the presser is at the level of the points of the jacks. The needles of this model are elevated in the same manner as the spiral float stitch model previously described in Chapter XVII (TEXTILE WORLD, Sept. 1942). When the needles are elevated sufficiently through the pattern jacks and intermediate jacks, according to the selector drum set-up, the shoulder of the needles engage the lower end of the presser and moves it up so the butts will be acted on by auxiliary cams. While the needles are being drawn down by the stitch cam, the jacks are pressed inward by an outside lever cam, and by virtue of their contact with the shoulder on the presser, the needles are slightly deflected and reverse plating results.

COTTON SECTION—Part II, Chap. II (Cont.)—Loom Reeds

By IVAR MOBERG

WEAVING certain kinds of fabrics, such as those having warp yarns of a hairy character, is frequently facilitated by using a half double reed, as illustrated in Fig. C11. This reed is helpful in cases where trouble with reediness occur and makes it possible to have the advantage of a one-end-per-dent reed without the close spacing of the reed wires. To obtain full advantage of a half double reed, it should be ordered higher than ordinary reeds so as to have the intercepting point of the two sets of reed wires above the workable portion of the reed. In other words, the weaving must take place well below the intercepting points of the reed wires. In this case only one half of the reed wires, those in the front line, actually beat up the filling, while the other wires in the rear line serve as spacers to prevent reedy cloth and act as separators for hairy and dense warps.

A double reed having two completely independent lines of reed wires is shown in Fig C12. It is similar to the half-double type, but actually gives more space to the warp threads and does not have to be any higher than ordinary reeds. The reed wires in the two lines are staggered so that one reed wire in one line is set opposite the opening between the two wires in the other line. Although there are two warp ends in each dent of the front line, they are separated by a reed wire in the rear line, which is the same as having one end per dent.

A detachable dent reed is illustrated in Fig. C13, permits bent or injured reed wires to be replaced right in the loom by the loomfixer. This reed is of the all-metal type and has slidable half-round guide rods which can be slid out past the injured reed wire. The reed wire can then be lifted out of the spacer springs and replaced by a new one. The guide rods and the metal back are then slid into normal position and the reed replaced in the lay. In placing this reed in the loom the soldered half-round guide rods should be placed towards the back of the loom, so that these will carry the strain of beating up the filling.

Reeds are now chrome or cadium plating to prevent rusting—the worst enemy of a reed. Plating is advisable since the useful life of these reeds is greatly increased. On ordinary reeds, it happens frequently that the unused portions of the reeds are so ruined by rust that the reeds can not be used for a wider fabric of the same type. Therefore, new reeds must sometimes be purchased, notwithstanding that the reeds on hand are in perfect condition, except for the unused portion at each end.

A standard size rib should be adopted by a mill for all reeds ordered. If reeds with different size ribs are used, the aligning of the loom is difficult and poor operation will result. Check rib diameter on each new lot of reeds received and reject those with ribs that are over or under sized.

Reeds should be held firmly in the loom without play in the reed grooves. Set the reed cap firmly on the reed, but avoid excessive pressure as it will have a tendency to spring the reed wires. Reeds often develop play in the center of the loom because of the reduced pressure of the reed cap at this point. Some loomfixers eliminate this play by tacking strips of cloth in the reed groove at this point. Although this is a very crude way of fixing the trouble, it is about the only way it can be done except to re-cut the reed groove and deepening it at the two ends.

To eliminate this center play the reed groove should be slightly convex so that an even pressure along the entire reed groove will be obtained. However, the lay has a great tendency to sag in the center, making the reed loose at this point. If the lay has center braces this fault can easily be remedied by raising the lay, but on a lay without center braces little can be done except to place cloth strips in the center of the reed groove or have it recut. Center play is rarely encountered with lays in which the back stay is drawn by bolts against the reed.

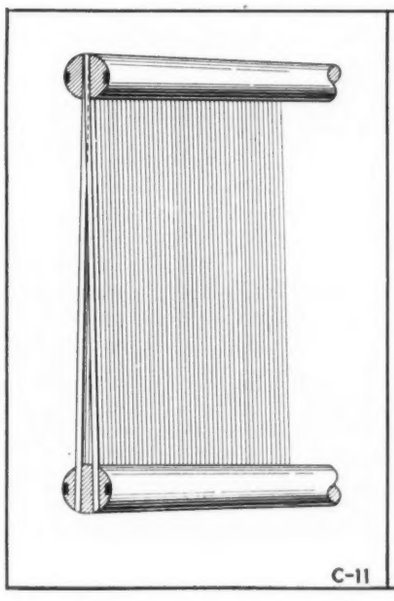


Fig. C11. Half double reed.

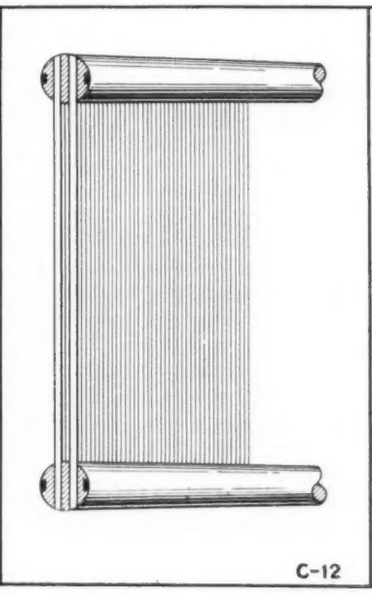
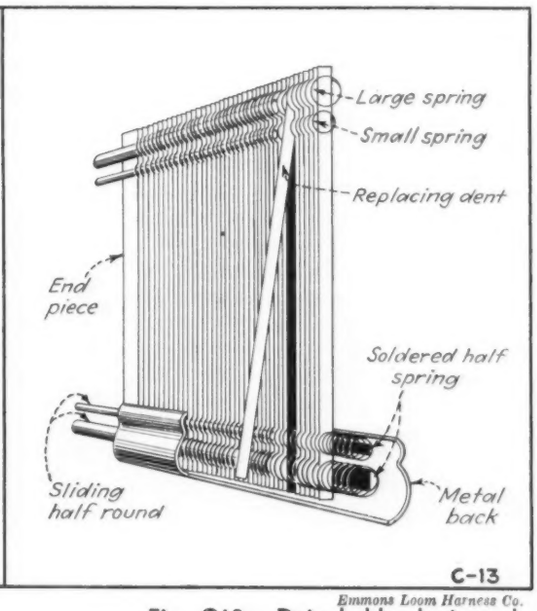


Fig. C12. Double reed.



Emmons Loom Harness Co.

Fig. C13. Detachable dent reed.

QUESTIONS & ANSWERS

Uneven Woolen Yarn

Technical Editor:

Can you put me in touch with a good carder and spinner who will tell me what is the matter with yarn on the inclosed card. (8858)

Considerable difficulty in analyzing this sample was encountered as the yarn difficulty was not stated. However, on weighing the sample, it was found to be approximately 1.5 run. As this yarn was olive drab, undoubtedly the yarn is to be used in 32-oz. army overcoating. Testing two-inch lengths of yarn for twist indicated from 7 to 8¾ turns per inch, or a variation from 0 to 1¾ turns per inch. Uneven twist as might be caused in spinning does not appear to be responsible for the thick and thin places appearing in the yarn. In our opinion, your difficulty is caused in the mixing or carding process. As no information is given as to the mix or the manner of blending the stock, we cannot give a definite statement as to the fault that may cause unevenness in the yarn.

Carding may be responsible for the difficulty. Overloading the card so as to obtain exceptionally high production might cause the stock to roll, running the card too long between each stripping, or running the workers and doffers too slow may cause this difficulty. Open settings, wire not sufficiently sharp, improper speeds, etc., might also be responsible for your difficulty.

Looper for Sweater Fabrics

Technical Editor:

We would like to obtain a looper. Please advise us what point looper is used on the sample of material attached herewith and also advise where we can obtain the same. (8882)

We assume from the inclosed samples that you want to join two sections of the 2x1 rib fabric to the circular jersey fabric to form a sweater-bottom. The jersey fabric shows 7 loops per inch which would indicate 6 points per inch for a looper, allowing for reasonable stretch of fabric. The 2x1 rib fabric shows 10 loops per inch on each side and would require that 1 outside loop and 1 inside loop be placed on each point along with 1 loop of the jersey fabric.

A two-thread looper would make a more elastic joint than could be made with a one-thread chain-stitch looper. It may be that 6 points per inch would stretch the 2x1 rib fabric too much and it might be necessary to experiment a bit as it is rather difficult to set up hard and fast rules for such variable and flexible fabrics.

Finishing Ply-Yarn Fabrics

Technical Editor:

We are inclosing three swatches of acetate and rayon and shall appreciate it if you will give us an outline of the necessary method of dyeing and finishing these fabrics, and the machinery necessary. (8888)

These swatches are all types of ply yarn fabrics. Such materials are first set and boiled off on a full-width boil-off machine. They are then transferred to a slow-speed reel dyeing machine. After dyeing at a temperature of 160°F., they are rinsed and then extracted on a full-width vacuum machine. It is possible to centrifuge certain types of ply-yarn fabrics if the operation is carefully controlled. Ply yarns are usually dried on a loop dryer without any tension. They are next framed without any tension and are finally decatized if this operation is needed to give the desired finish.

Cut Filling Yarn

Technical Editor:

I am a loomfixer and I have trouble about filling breakage. I would like some information about this problem: Why is it that the filling breaks on automatic looms when the shuttle is going toward the magazine end and does not break going toward the drop box end? This applies not only after the doff on the second pick, but at any time on a full bobbin, half full, and especially when the bobbin is getting low. I will say it is fairly good filling. What causes this trouble and what could be done to end this trouble? (8874)

Filling cutting at the box side of an automatic loom may be caused by a number of different things. The fact that filling is breaking only at the box side indicates that the bobbins are properly wound and it is safe to assume that the trouble may be caused by the shuttle not being thrown straight as it leaves the box, or the filling catching on some rough portion of the lay or box. If the loom is equipped with a pick release or floating binders the adjusting screw in the pick release arm must be set so that there is little binder pressure on the shuttle at top center so as to start the shuttle in a straight line. If the binder is opening excessively at top center the shuttle is almost certain to strike the mouthpiece of the shuttle box as it leaves and cut filling will result.

Shuttle boxes should be adjusted so as to be perfectly level with the race plate on the lay. Lay end and shuttle box alignment should also be checked. A worn picker rod or bushing that allows the picker rod to move out of its original position will also cause a shuttle to throw out of line. The picker rod must be aligned with the picker race in the lay end and in the shuttle box.

Shuttle boxes should be examined for cracked or broken shelves or any rough edges that might catch the filling. A broken shelf in a shuttle box is almost certain to cause filling breakage. Shuttles that are rough or chipped should be sand papered and shellaced.

Filling tension should be sufficient to prevent the filling from resting on the race plate or one of the shuttles may cut it as it is picked out of the shuttle box. If the broken pick is removed from the shed and stretched back toward the box, this will locate the point where the filling is being cut.

Cut Edges in Bemberg Fabric

Technical Editor:

We are running Bemberg 100-den. both ways, 12 turns per inch. We find that the edges are cut, due to the beating in. The fabric is a two-shot, satin weave, 104 picks per in., 40½ reed, 75 wire, 32 in. wide, tabby edge. It is the filling that is cut, leaving a fussy edge. (8876)

It is difficult to give a specific reply to your inquiry as no sample showing the defect was inclosed. However, we are listing below several possible causes of the trouble.

First, if you are running the edge ends from the same warp beam you are likely to have this condition due to the difference in binding, as one works against the other; that is, the edge will tighten up and cut the filling.

Second, too many ends in a dent will also cause this condition, as some mill men try the trippling or grouping of a number of ends to form a catch cord.

We suggest that you try to time your loom somewhat differently; that is, have shafts or harness level and bring lay of loom at least ½ in. past center.

NEWS OF THE MONTH

Survey on Waterproofing Textiles

Recent developments in production of waterproof and water-repellent fabrics for military and civilian use are described in a survey issued as Supplement No. 2 to *Textile Research*, official publication of the Textile Research Institute and the Textile Foundation. The report states that the present emergency has made it necessary for many mills to apply proofing treatments to textiles and that shortage of certain chemicals frequently used for the purpose has made the problem more difficult. An important part of the report is a bibliography containing over 100 references to important literature on the subject.

Research workers and technicians whose work is associated with the treatment of textiles to render them waterproof or water-repellent can secure copies of the survey by writing to Textile Research Institute, Inc., 10 E. 40 St., New York.

Textile Inspectors Needed

Persons with industrial experience in the manufacture of textiles and other products are being sought by the U. S. Civil Service Commission for technical inspection of textile equipment used in the outfitting of ships, at the place of manufacture and at the point of delivery. The U. S. Civil Service Commission, Washington, D. C., will accept applications until the needs of the service are met.

New Research Bureau in WPB

An Office of Production Research and Development has been established in the War Production Board, with Dr. Harvey N. Davis, president of Stevens Institute of Technology, as director. Its purpose is to insure the quickest and most effective utilization of inventions, mechanisms, processes and materials that can be used in the production of war goods and essential civilian goods.

The new office will have four principal functions: (1) to provide technical information on the problems and on research in progress in WPB; (2) to initiate the evaluation and analysis of specific scientific or technological proposals; (3) to get needed research accomplished, by contracting with outside laboratories or agencies for experimental work; (4) to bring about development of such projects or processes as are found to merit it, through contracting for the erection of pilot plants.

School and Home Economists Cooperate

An important cooperative program is being undertaken by the Philadelphia Textile Institute and a group of home economists in business, colleges, textile laboratories, etc. A Textile Seminar has been set up and monthly meetings are being held. Special interest in fundamental textile courses was aroused by the one-year course offered by the Institute to home economists who have had from three to five years experience in teaching, business, or in extension service. Three home economists are studying this year in the Institute on commission scholarships given by the American Home Economics Association. They are Marjorie Neal, Bessemer, Ala.; Laurene Shaw, Columbus, Ohio; and Martha Jungerman, Bowling Green, Ky. Two of the scholarships were announced by Dean M. Earl Heard at a meeting in Boston; the third was made possible later by contribution of several textile firms.

Qualifications for applicants as well as plans for the course were determined by a division committee cooperating with Dean Heard: Lillian Locke of Teachers College, Columbia University; Ardenia Chapman of Drexel Institute of Technology; Gladys Winegar, Textiles Education Bureau, New York; and Bernice S. Brenner, *Good Housekeeping* Institute, chairman. Applications for 1943–44 scholarships may be sent in now.

The fundamental textile courses offered will prepare home economists for advanced textile teaching or for business opportunities depending upon their own interests.

NEW HOSTESS UNIFORM (Army), shown herewith, has the jacket and skirt made of all-wool gabardine, 13 oz. material, light blue color. Hat is same material and color. Hat costs: $3.30, jacket and skirt: $16.35. The overcoat is of fleece-faced overcoating, light blue material, 18 oz. material. Price is $13.35. Coat is all-wool. It has an Alpaca lining, removable by buttons, for cool and cold climates. Lining is $5. The girls buy their own uniforms. A white blouse of broadcloth or poplin is worn.

Photo by U. S. Army Signal Corps

Expects Clothing Rationing to Be Unnecessary Here

Rationing of clothing will be unnecessary in this country, said Arthur Besse, president of the National Association of Wool Manufacturers speaking before the annual meeting of the Philadelphia Wool and Textile Association, on Nov. 5, if the Government gives a degree of encouragement to the production of civilian fabrics of wool.

"If such encouragement can be given and is not given," Mr. Besse added, "then rationing comes not because it is necessary but because someone wills it. If such encouragement cannot be given, it will be because of some military necessity, some necessary choice between civilian clothing and something deemed of greater importance. If it comes to that, the public will be entitled, I think, to know what the choice was and what specifically was preferred over civilian apparel."

James Akeroyd of James Akeroyd & Co. was elected president of the Philadelphia Wool and Textile Association, at the business session. He succeeds William A. Longshore of I. Reifsnyder Son & Co. Clarence Doan of C. E. Doan & Co.,

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and Everett Kent of Kent Mfg. Co., were elected vice-presidents. Continuing to hold office are: Frank Levering, of Eavenson & Levering Co., as secretary, and Ellwood Moore, of William F. Allen & Co., treasurer.

Annual Hosiery Conference Postponed

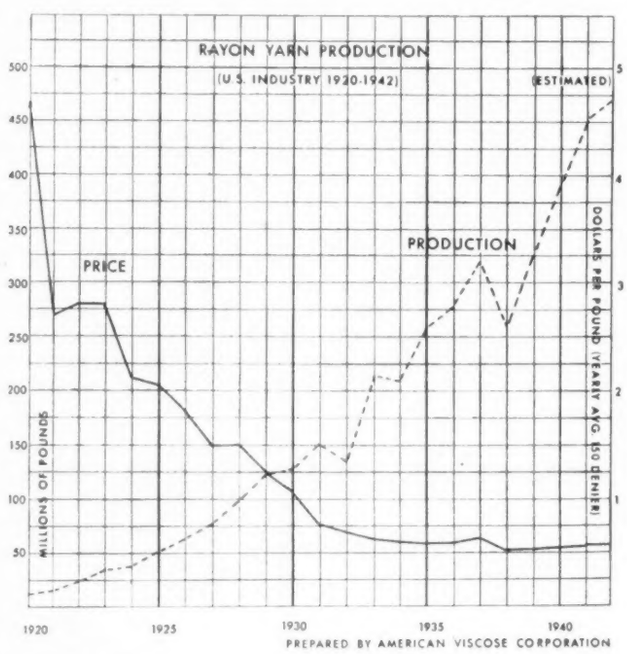
The Hosiery Industry Conference which has been held in New York each January for the last five years will not be held next month. It is under consideration to hold the conference following the annual meeting of the National Association of Hosiery Manufacturers scheduled for New York on a day during the last week of April, 1943.

Textile Fabrics Association Hears Dr. Haley

The 30th anniversary meeting of the Textile Fabrics Association was held Dec. 11 at Hotel New York, New York. Dr. Bernard F. Haley, acting director of the Textile, Leather & Apparel Division of OPA was the guest speaker. W. P. Fickett is president of the association.

1942 Rayon Production Estimated

United States production of rayon in 1942 will probably approximate 625,000,000 lb., setting a new production record, according to an estimate made by Wm. C. Appleton, president of American Viscose Corp. It is interesting to note that TEXTILE WORLD's estimate for the 1942 output, published in its Annual Synthetic Fiber Section in September, agreed exactly with Mr. Appleton's figure. The sub-division of the two estimates into filament and staple rayon is also close; Mr. Appleton estimates 470,000,000 lb. of filament and 155,000,000 lb. of staple, while TEXTILE WORLD put these two categories at 475,000,000 lb. and 150,000,000 lb., respectively.



THE CHART above, prepared by the American Viscose Corp., shows filament rayon yarn price and production trends from 1920 through 1942. From a high of more than $4.50 a pound in 1920, the price of 150-denier rayon yarn has been reduced to its present level of 55c. In the same period, United States production of filament rayon has risen from 10,125,000 lbs. in 1920 to estimated 470,000,000 lbs. in 1942. The estimated 1942 production represents an advance of 3.1% over last year's output of 451,204,000 lb. of all types of rayon yarn—viscose, acetate and cuprammonium—manufactured in the United States.

MISSISSIPPI MAGIC is the name of a new line of prints and plain colors introduced last month by Celanese Corp. of America. Illustrated above is one of the prints. The motifs are taken from river scenes, from flowers and from old iron-work used in the gates to colonial mansions. The colors have the same inspiration.

"Carded Yarn Group" Is Now "Carded Yarn Association"

E. O. Fitzsimons, secretary-treasurer of the Carded Yarn Group, Charlotte, N. C., announced Nov. 19 that the organization has changed its name to the Carded Yarn Association. As a result of a conference between Dr. C. T. Murchison, president of the Cotton-Textile Institute; J. A. Moore of Edenton, chairman of the Carded Yarn organization, and Mr. Fitzsimons, it was decided that the change in name would effect an appropriate recognition of the group's position as an influential entity within the cotton-textile industry.

Hosiery Trade Working on Simplification

National Association of Hosiery Manufacturers has cooperated in forming five committees representing five branches of the hosiery industry created for the specific purpose of developing simplified lines of constructions to be submitted for consideration by WPB. The hosiery industry, like many other consumer goods industries largely engaged in manufacture of civilian goods, is facing increased problems arising out of a relative scarcity of materials. This situation can be improved in part by a simplified procedure which will apply generally to all manufacturers. It is understood that the Government authorities will be sympathetic toward enacting the recommendations of these committees if they show economies in use of materials, facilities and manpower.

Wool Overseers Hold 59th Annual Meeting

The 59th annual meeting of the National Association of Woolen & Worsted Overseers was held Nov. 14 at Hotel Manger, Boston. Dr. Allan A. Stockdale of the National Association of Manufacturers, spoke at the banquet. New members voted on at the meeting included 20 active and 7 associate. Applications for membership to be acted on at the next meeting totaled 13 active and 2 associate.

Edward Wolfendale, of Arlington Mills, Lawrence, Mass., was elected president; Clarence L. Cutler, Hudson, N. Y., treasurer; James J. Burns, Holyoke, Mass., secretary. The only contested office, that of third vice-president which places

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Speeds Production! Reduces Waste!

1. FIBER BREAKAGE IS REDUCED by keeping relative humidity high enough to prevent brittleness.

2. HIGHER PRODUCTION RATES are possible with danger of breakage reduced.

3. LESS FLY DUST than from dry, brittle fibers.

4. HEALTHIER WORKING CONDITIONS are provided by humidified air.

IF dry air stymies production and causes excessive trouble in your plant, the compact unit above may hold the solution to your problem. Textile plants all over the country are proving the value of Armstrong Steam Type Humidifiers for combating all the evils of low relative humidity.

Armstrong Humidifiers are low in cost — the model illustrated lists for only $100 complete with sensitive Friez humidistat and all accessories and is capable of handling up to 40,000 and more cu. ft. of space. Installed and used as simply as unit heaters, connected into existing steam lines and electrical circuit. Let us send you detailed information. There is no obligation.

ARMSTRONG MACHINE WORKS

372 Maple Street • Three Rivers, Mich.

***WRITE TODAY** for copy of the new bulletin "Armstrong Humidifiers in Industry." It tells how many textile mills are using Armstrong Humidification to advantage.*

ARMSTRONG

BUILT BY THE MAKERS OF ARMSTRONG STEAM TRAPS

What do you expect of

Certified Climate?

Are you figuring on stepping up your machine operating speeds?

Do you expect to benefit by higher and more dependable REGAINS; more uniform numbers, of greater strength, smoother and more compact drafting; less waste and fly?

Or — even without an increase in operating speeds, do you figure that fewer stops, fewer piecings, fewer seconds will step up production?

Textile Air Conditioning results most satisfactorily when production men and Certified Climate engineers work together as partners.

Parks-Cramer Company

Fitchburg, Mass. Charlotte, N. C.

the candidate in line for the presidency three years hence was won by Elwood Ward, of Fulton, N. Y. There were added to the board of trustees James Wilson, Robt. J. Harrington and Abraham Booth.

Additional Winners of the "E" Award

The following organizations have been awarded the Army-Navy "E" pennant for excellence in production. These are in addition to similar lists previously published. The names include not only textile mills but concerns of interest to members of the textile industry.

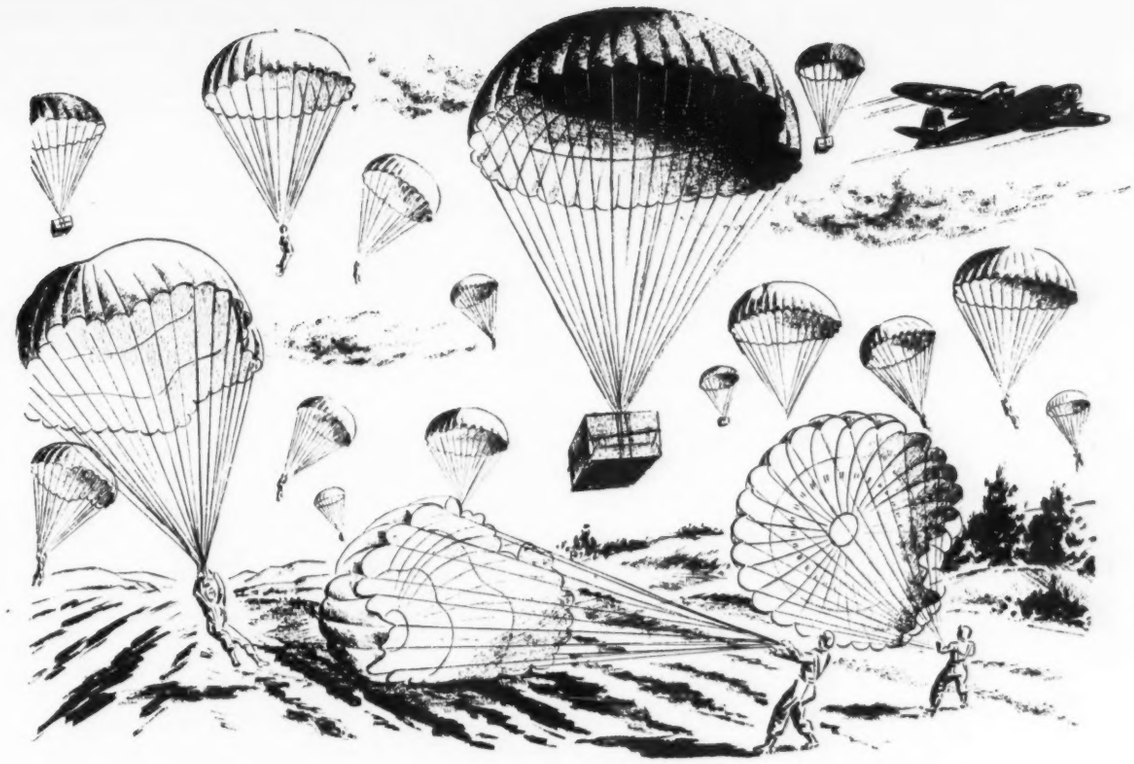
Philadelphia (Pa.) Quartermaster Depot
Jeffersonville (Ind.) Quartermaster Depot
Gaede Silk Dyeing Co., Paterson, N. J.
Stewart Silk Co., Easton, Pa.
Singer Mfg. Co., Elizabethport, N. J.
Bloomsburg (Pa.) Mills
Cheney Bros. Manchester, Conn.
Suncook Mills, Suncook, N. H.
Crompton & Knowles Loom Works, Worcester, Mass.
Supreme Knitting Machine Co., Brooklyn, N. Y.
Hood Rubber Co., Watertown, Mass.
Armstrong Cork Co., Lancaster, Pa.
American Machine & Metals, Inc., Moline, Ill.
E. I. du Pont de Nemours & Co., Electro Chemicals Dept., Niagara Falls, N. Y.
B. F. Goodrich Co., Akron, Ohio
Johnson & Johnson Gas Mask Division, Chicago, Ill.
Linde Air Products Co., East Chicago, Ind.
General Cable Corp., Rome, N. Y. and Perth Amboy, N. J.
Solvay Process Co., Hopewell, Va.
Semet-Solvay Co., Solvay, N. Y.
Acushnet Process Co., Rubber Division, New Bedford, Mass.
General Motors Corp., New Departure Division, Bristol and Meriden, Conn.
Ingersoll-Rand Co., Painted Post, N. Y.
U. S. Rubber Co., Des Moines, Iowa.
Carrier Corp., Syracuse, N. Y.
International Business Machines Corp., Endicott, N. Y.
Nylon Research Laboratory and Pilot Plant, E. I. du Pont de Nemours & Co., Wilmington, Del.
Winthrop Chemical Co., New York.
Bound Brook (N. J.) Oil-Less Bearing Co.
Ohio Injector Co., Wadsworth, Ohio.
Victor Chemical Works, Mt. Pleasant, Tenn.
Bausch & Lomb Optical Co., Rochester, N. Y.
Aluminum Industries, Inc., Cincinnati, Ohio.
Chain Belt Co., Milwaukee, Wis.
Westinghouse Electric & Mfg. Co. (5 plants), Pittsburgh area, Pa.
American Rolling Mill Co., Middletown, Ohio.

Wickwire Spencer Steel Co., Worcester, Mass., and Babcock & Wilcox Co., Barberton, Ohio, have received "M" awards.

Compulsory Collection of Scrap Indicated

The possibility that the time is near when compulsory collection of scrap must be substituted for the present voluntary plan is indicated in a recent release made by Hamilton W. Wright, chief of the Industrial Salvage Section, WPB. Mr. Wright stated that as the war proceeds we must dig deeper into all items which represent potential scrap. In the near future the industrial salvage section will organize another scrap campaign directed toward collection of semi-fabricated goods now held in plant inventory.

The voluntary scrap collection campaign in the textile industry continues unabated. Among the companies which have recently reported results of this campaign are Pequest Hosiery Mill, Inc., Belvidere, N. J., which has scrapped three



Wings for the Army's Attacking Eagles

Attack from the air . . .

Cotton serves the Paratroopers as they capture and hold strategic airports and bases.

It is Cotton that supplies the heavy tapes and parachute belts that safeguard air-borne Infantry. Colored chutes of mercerized cotton bring guns, ammunition and supplies.

Army purchases of parachute fabrics totalled 50 million yards in a single month . . . And the production job is getting bigger every day.

The terrific strain on mechanical equipment calls for careful maintenance to prevent slow downs. Mill engineers and superintendents are guarding against this danger by keeping their equipment at the highest point of efficiency.

In the Wet End of Textile Finishing, Butterworth Machines are working day and night. Butterworth Engineers freely offer their cooperation to every mill seeking to achieve increased productive efficiency . . . or to repair or replace worn-out or obsolete equipment.

All of our facilities not required for Ordnance production are available to help you solve your finishing problem. Let our experience serve you now.

***64%**

of equipment now in use in the wet end of textile finishing cannot operate at a profit in competition with modern machines.

*Proved by Research

H. W. BUTTERWORTH & SONS CO.
Phila., Pa. Serving the Textile Industry since 1820
Offices in Providence, R. I. and Charlotte, N.C.
In Canada: W. J. Westaway Co., Hamilton, Ont

Butterworth

PRODUCING GUN MOUNTS FOR THE UNITED STATES ARMY

KEEP 'em Flying

for a

Victorious New Year!

★

SPEED UP PRODUCTION

AND

DELIVER THE GOODS

★

Let our Heating Engineers suggest how you can adapt *your* drying problems to the **CARBOMATIC RADIANT HEAT** no-flame gas-burning equipment. It uses any illuminating gas, is readily adaptable to your present equipment, and is quickly and economically installed.

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Heating Engineers and Manufacturers of Radiant Heat Infra-red Drying Equipment

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Factory—NEW HAVEN, CONN.

TEXTILE CALENDAR

National Cotton Council, annual meeting, Memphis, Tenn., Jan. 25 to 27, 1943.

Wholesale Dry Goods Institute, 16th annual convention, Hotel New Yorker, New York, Jan. 20 and 21, 1943.

knitting machines weighing a total of 35 tons. In Reading, Pa., Rosedale Knitting Co. is planning to scrap 271 machines comprising 1,750 tons of metal; Berkshire Knitting Mills is dismantling 50 20-section full-fashioned machines, providing 300 tons of metal; and Nolde & Horst Co. has scrapped several full-fashioned machines and a large quantity of other equipment.

Urge Use by Industry of A.S.A. War Color Standard

Use by industry of a war color standard adopted by the American Standards Association was advocated at a meeting held Nov. 29, in New York, under joint sponsorship of General Electric Co. and Interchemical Corp. Advocates of the standard stated that its general adoption by the textile and other color-using industries would eliminate much of the existing confusion in matching colors. The standard calls for use of the spectrophotometer as the basic instrument for establishing color specifications. For the popular identification of color, material standards, such as are contained in the "Munsell Book of Color," can be employed. Speakers at the meeting were Dr. Arthur C. Hardy, Massachusetts Institute of Technology; Dr. Deane B. Judd, National Bureau of Standards; Dr. Loyd Jones, Eastman Kodak Co.; Lieut. Col. Frank F. Steadman, Philadelphia QM Depot; A. Wallace Chauncey, vice-president, Interchemical Corp.; and E. S. Lee, director of the general engineering laboratories, General Electric Co. R. E. Zimmerman, vice-president of United States Steel Corp. and president of A.S.A., presided.

Seamless Minimum to Be Raised to 40¢

The seamless hosiery industry committee under the Wage-and-Hour Law has unanimously recommended an increase in minimum wage for seamless workers from 36¢ to 40¢ an hour. There was no opposition at the public hearing on Nov. 24 in New York and it is expected that the rate will be made effective on Jan. 4, 1943. G. Allen Dash, Jr., was chairman of the Seamless Committee.

Human Interest in the Month's News

To meet the critical textile fiber shortage in Germany, the German Army Command has ordered the tails of all cattle shorn to help make up the deficiency. The order directs that "a little tuft will be left at the end of a cow's tail for whisking off flies." . . .

Gen. Eisenhower ordered large purchases of Arctic wear, wool clothing and similar equipment suitable for a campaign in Norway, and had them issued to the troops, as one part of the marvelous provisions made for keeping the North African invasion a secret from the enemy. It worked. . . .

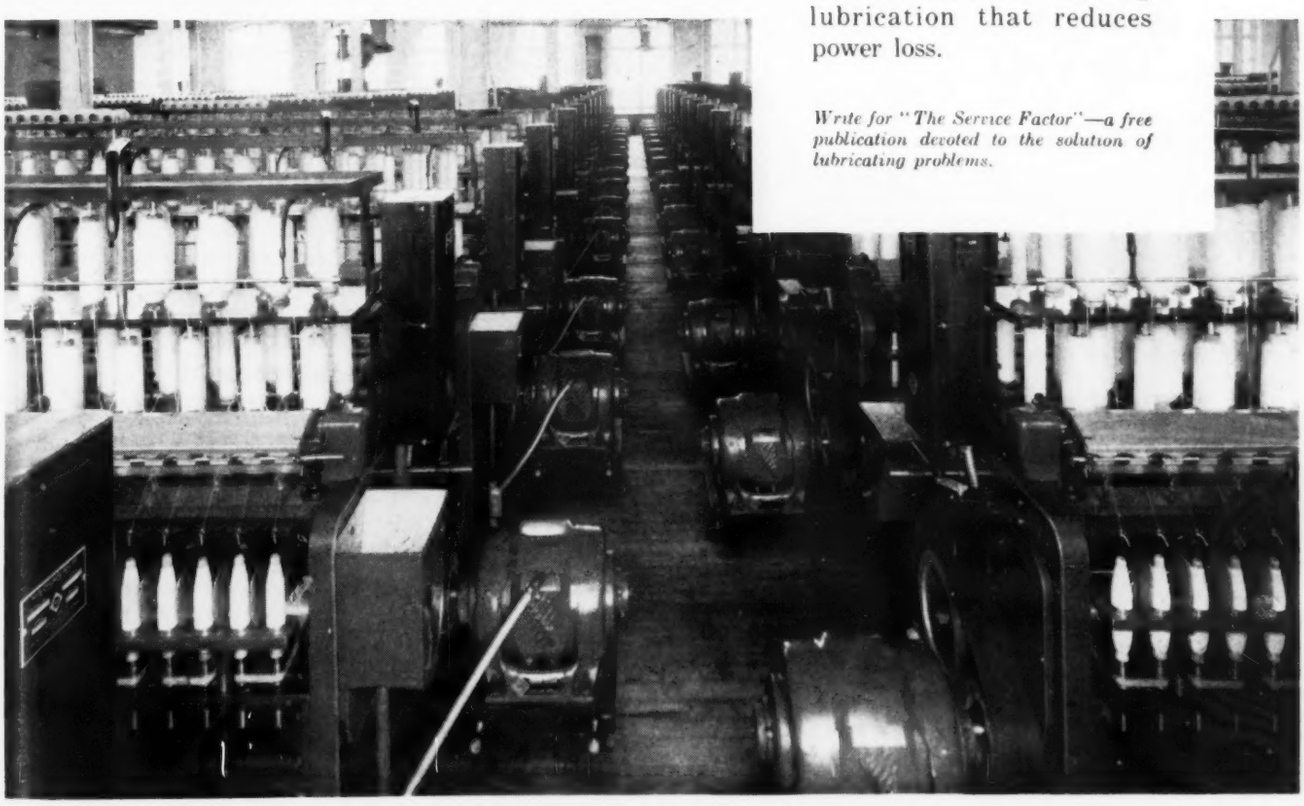
Schubert Lumber Co., in Knoxville, Tenn., has added lines of men's and women's apparel, cosmetics and housewares. That's only half the story: the lumber company's store is across the street from the Standard Knitting Mills, where about 3,000 employees, mostly women, work. Window displays face the mill. . . .

"I told you so" is the spirit of an advertisement by a

REPLACEMENTS are as big a problem *at home* as at the Front. Avoid replacement problems and interference with production in *TEXTILE MILLS* by using

. . . SINCLAIR LILY WHITE OILS. These oils come in viscosity ranges suited to all spindle speeds, and offer the *correct* non-drag lubrication that reduces power loss.

Write for "The Service Factor"—a free publication devoted to the solution of lubricating problems.

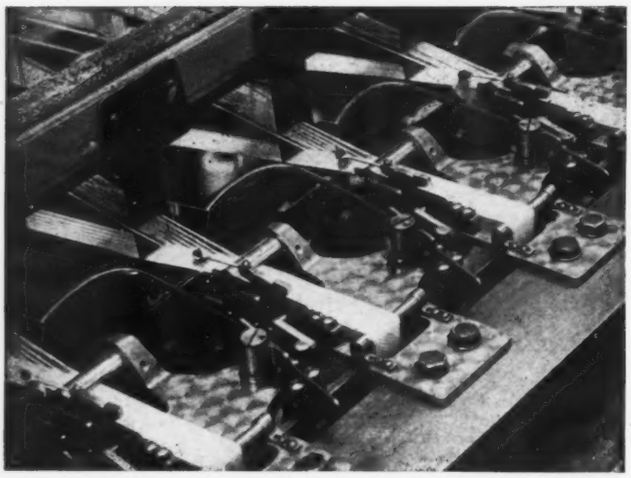


SINCLAIR TEXTILE LUBRICANTS

FOR FULL INFORMATION OR LUBRICATION COUNSEL WRITE NEAREST SINCLAIR OFFICE

SINCLAIR REFINING COMPANY (Inc.)

2540 West Cermak Road, Chicago • 10 West 51st Street, New York City • Rialto Bldg, Kansas City • 573 West Peachtree Street, Atlanta • Fair Building, Ft. Worth



CLUTSOM HIGHSPEED WEAVING MACHINES

The Clutsom highspeed shuttleless loom gives high production in a wide range of narrow textile fabrics.

Rigid or elastic webbing, tapes, zipper tapes, venetian blind tapes, rug bindings, ribbons and hospital webs are some of the various items in regular production.

Wages have risen—operators are costly—no material should be wasted that can be saved. The Clutsom machine gives greatly increased production for the same amount of wages paid—cuts material waste to the minimum—no skilled labor required.

A demonstration machine can be seen at this address.

It is possible at present to give limited delivery of machines immediately.

CLUTSOM MACHINES INC.

205 EAST 42 STREET NEW YORK

Telephone MUrray Hill 4-2327

FACTORY: Springdale, Connecticut

Buffalo department store declaring that "We're the store that had red flannels when everybody else sneered at them." The advertisement adds: "Fashion magazines are in a furor discovering how cozy long legs can be. But the folks who shop at Jahraus-Braun's have known it right along. We're old hands at taking the shivers out of winter and drawing the teeth from the Buffalo wind." . . .

"A good sweater is worth a ton of coal" is the appealing slogan in a Brooks Brothers advertisement offering sweaters from Scotland to the men of fuel-rationed New York.

Aridye Corp. Offers New Licensing Plan

Due to the rapidly increasing use of pigments in dyeing and printing fabrics for Government and civilian purposes, Aridye Corp., Fair Lawn, N. J., has announced a new licensing plan which is available to any textile finisher. Under the new arrangement, licensees are granted, with no increase in royalty rate, the right to use both the pigment printing methods and the pigment dyeing methods covered in patents owned by Aridye Corp., and to make or have made the patented pigmented compositions. In addition, the license permits the use of improvements which already have been made in the original methods and provides for the inclusion from time to time of further improvement patents. Aridye Corp. states that it believes this simpler and broader licensing plan will stimulate technical progress in and commercial development of pigment dyeing and printing.

Patents New Tire Fabric

A patent covering a new type of tire fabric was granted to Celanese Corp. of America last month. The patent covers fabrics or cords containing yarns or filaments of cotton or regenerated cellulose which have been treated with phthalic anhydride under such conditions that the outer surface only of the materials is esterified. This process is said to result in a better union between the tire cord or fabric and the rubber applied thereto.

Viscose Corp. to Give Award for Outstanding Achievement

A group of annual awards for outstanding achievement, to be known collectively as the Salvage Award, in honor of Sir Samuel A. Salvage, who pioneered the United States rayon industry, has been established by the American Viscose Corp., which he helped to establish and headed for many years. The awards will be in the form of gold medals accompanied by

M. P.'S PICK UP SOLDIER WEARING "ZOOT" UNIFORM

WASHINGTON, D. C.—A colored Army sergeant wearing a uniform cut as a zoot suit with drape shape recently was in custody of Washington military police.

The soldier was picked up in the vicinity of Turner's Arena, where, it was believed, he might have planned to do a little rug-cutting.

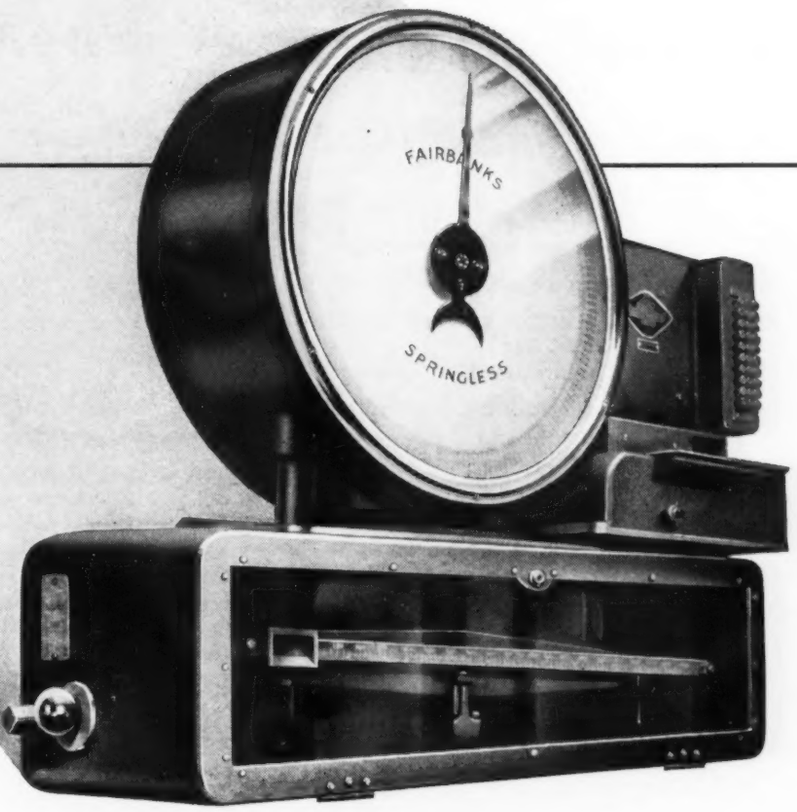
He wore a tunic coat made of expensive officer's gabardine and with regulation insignia. It had flared, puffed sleeves, and hung below finger-tip depth.

His pants, suspended by a white belt through double loops, had a chest-high waist and narrowed to less than 10 in. at the foot. Cuffs were hem-stitched.

A cocoa-colored shirt and an over-seas cap tailored with an extra high peak completed the ensemble.

At police headquarters, the soldier revealed he was from out-of-town. His Army station was not disclosed.

THESE SCALES HELP UPSET THE AXIS TIMETABLE!



THE speed and accuracy of modern Fairbanks Scales, and their many ingenious applications, are helping rush war matériel production.

Use your priority to get Fairbanks weighing equipment that will not only save precious minutes now but also serve you best in years to come.

Fairbanks scale engineers are ready to help you plan for today with an eye for tomorrow. Fairbanks, Morse & Co., 600 S. Michigan Ave., Chicago.

FAIRBANKS-MORSE

FAIRBANKS SCALES

SCALES
DIESELS
MOTORS
PUMPS

PROTELA

PREVENTS TEXTILE DESTRUCTION and WASTE DUE to MOLD and MILDEW

Especially adapted for use on all vegetable fibre fabrics including those made of cotton, linen, jute, sisal, hemp, paper.

PROTELA is now being used to prolong the life of critical materials by preventing rotting due to mold and mildew. PROTELA has been tried, tested, and proved its merit under the most stringent climatic conditions.

Investigate PROTELA'S advantages for every product exposed to mold and mildew.

PROTELA
IS THE IDEAL
MOLD AND MILDEWPROOFING
COMPOUND

- Durable
- Economical
- Easy to apply
- Easy to handle
- Non-poisonous
- Non-inflammable

Spare for the war effort: use

A Product of

Albi Chemical Corporation

9 PARK PLACE, NEW YORK

certificates and will represent the company's public expression of appreciation for action or achievement beyond the usual performance of duty.

Broad latitude has been allowed in the matter of selecting recipients of the new award. It may be made for an important discovery, an outstanding development, a suggestion leading to an important improvement, or it may be awarded for perseverance in carrying a difficult assignment through to completion against all obstacles even over a long period of time. The award may also be bestowed for outstanding performance of routine work, or for unusual service, helpfulness to associates, loyalty, or devotion to the company's welfare.

Advertising to Its Own Employees

The type of advertising campaign which is often recommended by sound students of public relations is that initiated by the American Viscose Corp. to explain the important part that rayon is playing in the war effort, to its employees, their families and friends and residents of the communities in which they work. The advertisements are to be run in newspapers in the cities where the company's seven plants are located: Marcus Hook, Lewistown, and Meadville, Pa.; Roanoke and Front Royal, Va.; and Parkersburg and Nitro, W. Va.

Fibers From Peanuts

Research on development of a synthetic protein fiber from peanuts is now being carried out by Courtaulds, Ltd., according to a recent announcement made by W. B. Jester of the National Peanut Council, Atlanta, Ga. Fabrics made from a blend of 50% of the peanut fiber and 50% wool are said to resemble all-wool fabrics in appearance and handle. The fiber is not yet available commercially. Production of the new fiber is covered by patents belonging to Imperial Chemical Industries, Ltd.

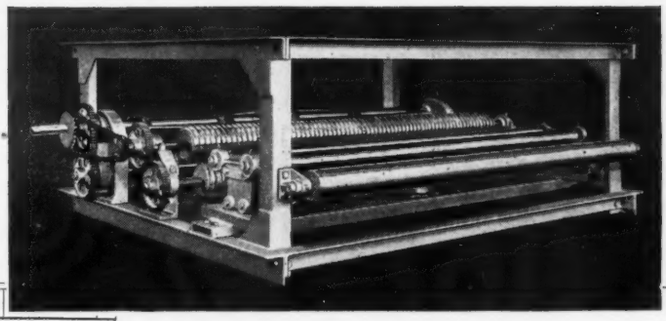
This and That

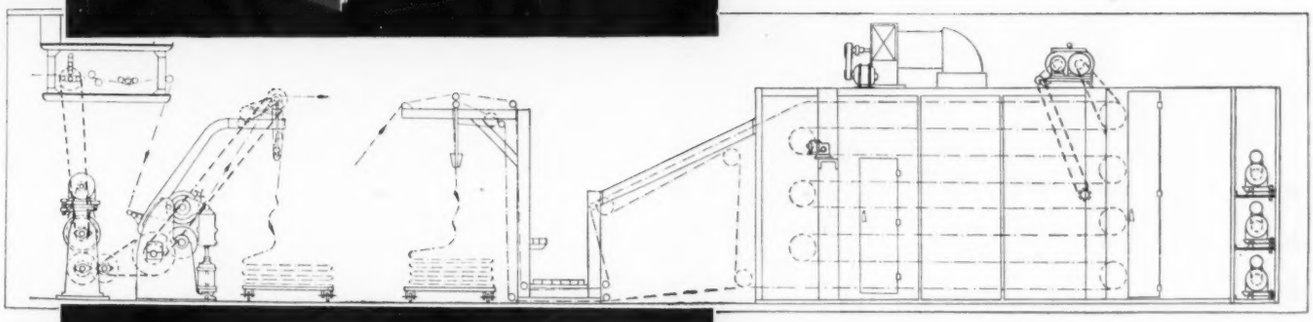
A "Maid of Cotton" will be selected in 1943 and will make the usual 16,000 mile tour of America, but instead of appearing in elaborate style shows she will carry a wartime message of conservation and care of cotton goods. An important part of her job, according to the Memphis Cotton Carnival Association and the National Cotton Council, will be the modeling of clothes suited to a nation of women at war work.

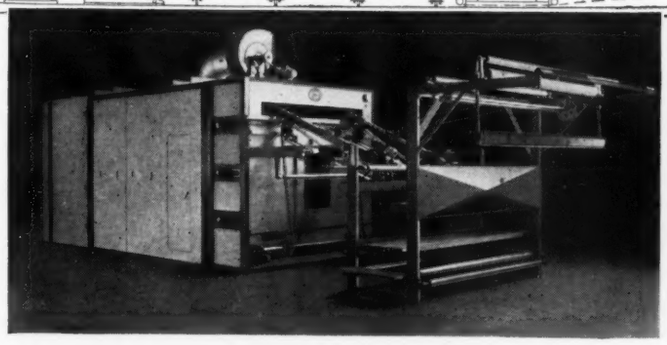
B. B. Comer, original founder of the Avondale Mills of Alabama in 1897, was honored by being pictured on the front cover of the current issue of the *Avondale Sun,* published by and for the people of the mills. A good part of the issue was used to tell the story of the job the Avondale Mills are doing in producing yarns and fabrics for the country's war program.

Durene Association of America has issued a new identification sticker for use on men's, women's and children's underwear and outerwear. The sticker clearly states specific qualities of Durene yarn of interest to the consumer from the service standpoint.

A portfolio containing 145 designs of women's full-fashioned cotton hosiery has been issued by the Bureau of Home Economics, U. S. Department of Agriculture. The portfolio was prepared by David H. Young, senior technologist in the Bureau's textile and clothing division. Designs covered were knit from combed, gassed, and mercerized







THIS IS THE UNIT FOR CONTINUOUS OPENING, EXTRACTING AND DRYING OF WOOLENS AND WORSTEDS AT SPEEDS UP TO 35 YARDS PER MINUTE

ILLUSTRATED on this page is a proven aid to continuous operation from the Washers through the tentering operation.

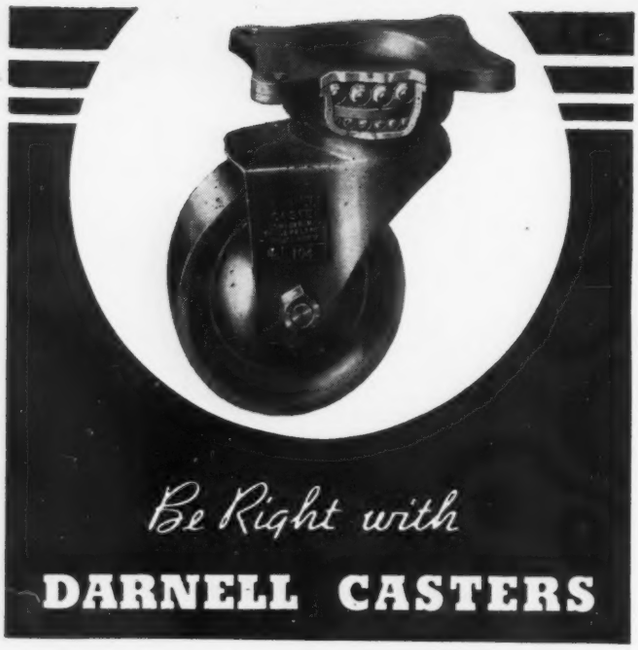
The line cut shows the Hunter Scutcher, Pneumatically Controlled Squeeze Rolls and Uniflow Tenter Dryer in continuous range operation. The goods are fed from a pot eye, opened thoroughly by the Hunter Scutcher, from whence they pass to the Pneumatically Controlled Squeeze Rolls, and may pass either directly into the entering bars of the Hunter Tenter Dryer or be folded onto a Scray and from there go into the Tenter Dryer.

This Hunter Tenter dries 14-ounce worsteds at 25 yards per minute, and 16-ounce woolens at 35 yards per minute—and does it in 12 lineal feet for the drying chamber with one man's labor.

Hunter now offers a completely new and radically different Cloth Tenter embodying an entirely new conception of air drying cloth with improved handle at high productive capacities. In the new Hunter Uniflow Tenter, drying times are reduced from 1.2 to 4 minutes, depending upon the weight of the fabric. Thus, your cloth is exposed to heat and air treatment but a fraction of the time usually required, with subsequent gain in handle and quality.

It may be possible that your present machines can be re-arranged to give you continuous operation. Hunter engineers stand ready to show you how you can do it on receipt of your inquiry. Write

JAMES HUNTER MACHINE CO.
NORTH ADAMS, MASSACHUSETTS
FOUNDED 1847



Darnell Dependability assures savings, service, safety, speed. A caster or wheel for every use.

Recognized Standard of Quality

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LONG BEACH, CALIFORNIA, 36 N. CLINTON, CHICAGO, ILL.

Ask for New 192 Page
DARNELL MANUAL

yarns ranging from 90/2 to 140/2 on 42- and 45- gage machines.

A contract for a special type of elastic cord made from the new vinyl resin yarn developed by American Viscose Corp. has been awarded to Ansonia (Conn.) O. & C. Co. by the Philadelphia Quartermaster Depot.

Wholesale Dry Goods Institute will hold its 16th annual convention and merchandise exposition on Jan. 20 and 21 at Hotel New Yorker.

Textiles Markets More Active but Largely Routine

Cotton goods sold in fair quantities during November in cases where the end-use gave a satisfactory priority rating. For example, at mid-month something over 16,000,000 yd. of 39-in., 80-square, 4-yd. print cloths were sold for the making up of approximately that number of shorts for the Army. Deliveries included December, January and February with a small yardage running into March. Mills did not seem disposed to offer print cloths for civilian use, but it is expected that lack of high-priority business in such items as 38½-in. 64x60s will make a certain amount of this construction available for the general market.

Wool goods for the spring 1943 have been allocated during the last few weeks at prices set at the ceilings of last season, The American Woolen Co. opened spring lines on Nov. 16, and a system of allotment has been worked out which will give consideration to the particular needs of each one of the company's customers. The offerings included not only the regular lines, but also a number of new mixtures, both manipulated goods and blends of worsted and rayon. In general the production of the industry is well occupied for four or more months ahead. Price of American Woolen No. 9641 12½-oz. piece dye is $2.27½ base, and of No. 8410 14½-oz. piece dye, $2.82½ base.

Rayon producers are making new production records despite the absence of newly-installed equipment in the industry. Continuous filament production for the third quarter is estimated at 119,600,000 lb. against the previous record of 118,800,000 lb. in the last quarter of 1941. Staple fiber production was also the highest on record, being 39,800,000 lb. for the quarter, exceeding the production for the second quarter of 1942 by 300,000 lb. The industry's production for October has moved to still higher ground.

Hosiery manufacturers have been receiving numerous requests for prompt shipment of rayon hosiery in time for the holiday trade, particularly from centers where war industries have been booming. Few mills can offer anything additional for nearby. Expectation is that quantities of rayon yarn available to hosiery manufacture during the next few months will slowly dwindle because of increasing military uses for rayon.

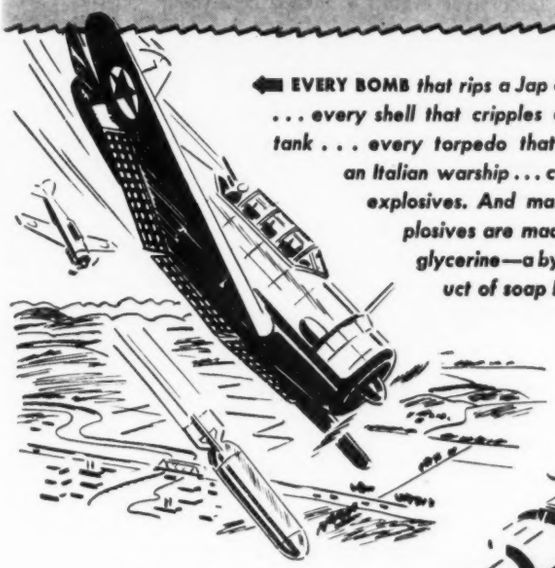
Underwear manufacturers have been disturbed by the new cost forms devised by OPA to obtain mill's figures on various styles of underwear. The object of the survey is the setting of a new series of ceiling prices, but the details asked for are such that numerous mills will find it difficult if not impossible to comply directly with the request upon the forms. Mills are still allocating available portions of their production not tied up with Government business to the civilian trade.

Outerwear manufacturers were gratified to be allocated an additional 6,000,000 lb. of raw wool as a result of WPB's action last month. However, this allotment comes rather late to be of immediate use for the current season. A group of bathing-suit manufacturers have agreed to promote the annual National-Swim-for-Health Week as usual in 1943.

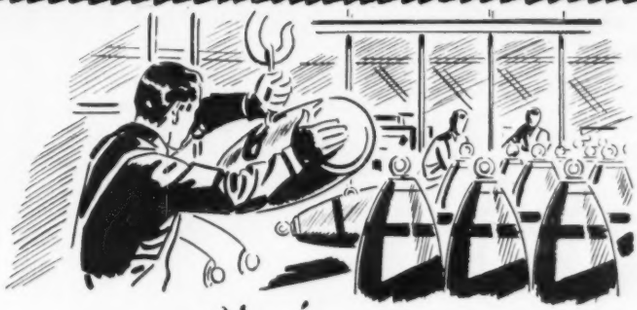
PRODUCTION FRONT TO BATTLE FRONT

C.P.P. PRODUCTS ARE AT WAR!

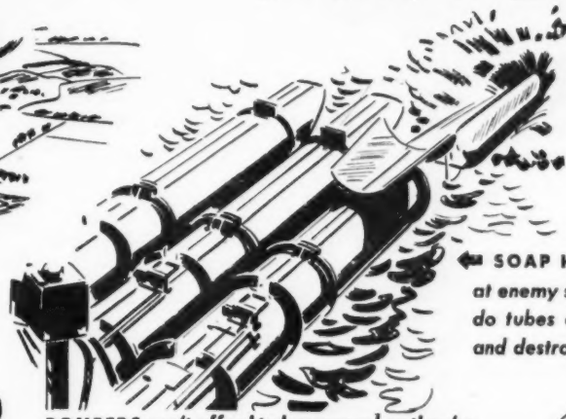
AT HOME AND ACROSS THE WORLD...ON LAND, AT SEA, AND IN THE AIR... COLGATE-PALMOLIVE-PEET PRODUCTS ARE HELPING TO CRUSH THE AXIS!



EVERY BOMB *that rips a Jap airfield . . . every shell that cripples a Nazi tank . . . every torpedo that blasts an Italian warship . . . contains explosives. And many explosives are made with glycerine—a by-product of soap!*

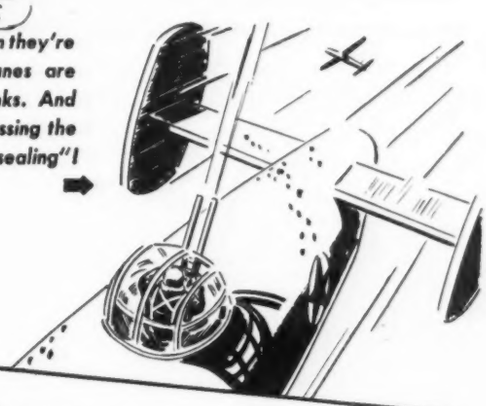


SHELLS *of many kinds and caliber . . . shrapnel and high explosive . . . require soap in the drawing operation!*



SOAP HELPS *launch deadly "tin fish" at enemy shipping! Torpedoes and torpedo tubes aboard P.T. boats, submarines and destroyers are lubricated with soap!*

BOMBERS *can't afford to lose gas when they're on a mission. Modern American planes are equipped with "self-sealing" gas tanks. And soap plays an important part in processing the materials that make these tanks "self-sealing"!*



SPECIAL *salt-water soap for showers . . . for hand laundering and general cleaning . . . is used aboard all U.S. Navy Ships!*

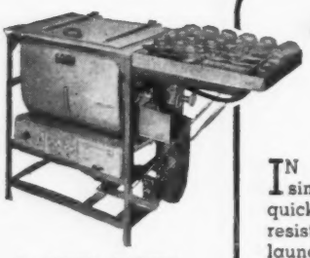
EVEN THE 'CHUTES *our Paratroops wear owe much of their strength to soap. For the material from which these parachutes are made is processed with infinite care, both before and after the fabric is woven—with soap!*

• If you find occasionally that an order is delayed, or not filled 100%, we hope you'll understand that it's *only because the nation's war needs must come first!* For Colgate-Palmolive-Peet Co. is straining every facility, not only to supply vital soap and soap by-products to the production and fighting fronts, but also to keep its regular customers supplied!

COLGATE–PALMOLIVE–PEET CO.

INDUSTRIAL DEPT. **JERSEY CITY, N. J.**

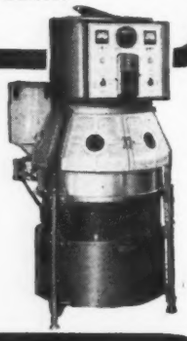
ATLAS-OMETERS



ACCELERATED TESTING EQUIPMENT

IN Atlas-Ometers you have a simple, easy way to learn, quickly, how your products will resist fading, or deterioration from laundering. Atlas-Ometers have been a valuable mainstay of the textile industry for over a quarter of a century. Their time-saving guidance is more essential right now than ever before.

LAUNDER-OMETER—Standard laboratory washing machine of the A. A. T. C. C.—measures resistance to washing action, shrinking, staining, color fastness to soaps and solvents. All factors carefully controlled—can be produced exactly at any time.

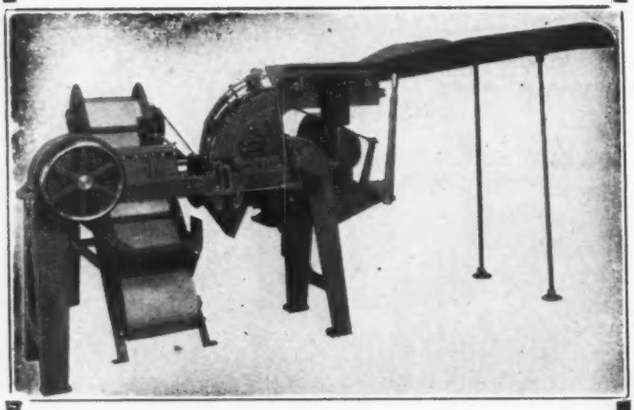


FADE-OMETER—Rotates specimens around the Atlas Enclosed Violet Carbon Arc, the closest approach to natural sunlight. Temperature automatically controlled.

WEATHER-OMETER—Duplicates effect of actual exposure—months of sun, rain, heat and cold condensed to a few days.

ATLAS ELECTRIC DEVICES CO.
371 W. Superior St., Chicago, Illinois

ATLAS-OMETERS
LAUNDER-OMETER • FADE-OMETER • WEATHER-OMETER



THE TYPE K BOBBIN STRIPPER

HIGH CLEANING CAPACITY
Protects barrel and finish. Usually pays for itself in one year—always within 18 months.

Complete information promptly furnished upon request

The Terrell Machine Co., *Inc.*
CHARLOTTE, N. C.

W. J. Westaway Co., Ltd. . Hamilton and Montreal, Canada
James F. Notman . . . . . Needham, Mass. N. E. States
E. W. S. Jasper, Inc., Elizabeth, N. J. Penn., N. J. and N. Y.
Geo. Thomas Co . Manchester, England.—European Agt.

NEWS ABOUT MEN

Edwin T. Malone, president and treasurer of Malone Knitting Co., Springfield, Mass. has been named to the Textile Industry Council of WPB.

Earl A. Byrum, who formerly owned and operated the Caroleen Knitting Mills, Shelby, N. C., and the Byrum Hosiery Mills, High Point, N. C., has disposed of his mill interests and is now engaged in the insurance business at Charlotte, N. C.

A. D. Crenshaw has been placed in charge of operations of Magnet Mills, Inc., Clinton, Tenn., while **Carl S. Kincaid,** president, is serving as chief of the hosiery unit of the knit goods section of the Textile, Clothing and Leather Division of the War Production Board.

Louis Stettauer has been elected vice-president of the Velveray Corp., New York.

Fred S. Strauss, lately treasurer, has been elected president of Harte & Co., New York to succeed **Ralph S. Harte,** who has retired from business.

Arthur Ross, Sr., principal owner of Tip Top Hosiery Mills, Asheboro, N. C., has leased these mills to **Nee C. English** and **J. C. Lloyd,** executives of Ragan Knitting Mills, Thomasville, N. C. The plant will be operated under the same name with no change expected in personnel. The Tip Top plant is producing men's hosiery for the Government, with **Arthur Ross, Jr.,** in active charge.

Hugh H. Lawson, executive director of York Knitting Mills, Ltd., Toronto, Canada, has been elected president of the Canadian Woolen & Knit Goods Manufacturers Association. **H. G. Watson,** of Newlands & Co., Galt, Ontario, was elected vice-president.

R. A. Bigger, of New York, has been elected executive vice-president of R. S. Dickson & Co., Charlotte, N. C. **J. M. Atkins** has been elected to the board of directors.

E. J. McMillan, president of Standard Knitting Co., Knoxville, Tenn., has resigned his position with the War Labor Board. He is succeeded on that board by **Cyrus Ching,** vice-president of U. S. Rubber Co.

E. L. Dale, formerly sales manager for Aberfoyle Mfg. Co., Chester, Pa., and more recently with Sauquoit Silk Co., has been elected vice-president and sales manager of the latter concern with offices at Scranton, Pa.

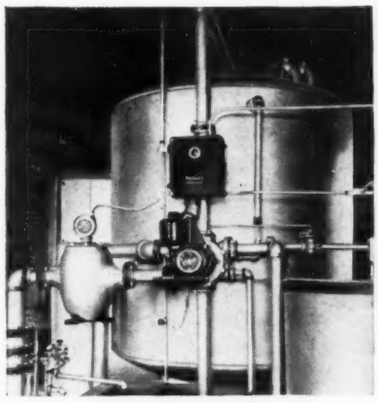
A. C. Ackerman, of Ackerman Knitting Co., Ballston Spa, N. Y., has been elected president of the Knit Glove & Mitten Group of the National Association of Leather Glove Manufacturers, Inc. He succeeds **James Blewer** of Johnstown, who is now a lieutenant commander in the U. S. Navy. **James H. Casey** is secretary of this group.

A. F. Mullins, Jr. has been promoted from assistant vice-president and secretary to vice-

FRANK L. WALTON, deputy director of the Textile, Clothing and Leather Goods Division of the War Production Board, has been appointed chief of the division, to succeed Henry Rose, who has resigned as of Dec. 15, to return to his duties as president of Henry Rose Stores, Inc., of New York.

Mr. Walton came from Catlin Farish Co., New York, of which he is vice-president, has been with the War Production Board since March 1, 1941.

How to get full capacity out of your zeolite water softener . . .



Zeolite water softeners play a real part in aiding the war effort. They save needed materials and consume only salt, which is readily available. Keeping your equipment in top operating condition not only saves you money and smooths out your processing but actually contributes to the national effort.

Capacity between regenerations

If you have a meter, you know what gallonage of water is being softened between regenerations. If not, it is suggested that you borrow one from your local water company. Soap tests of the water hardness should be made a number of times during the test run so as to determine if zero water is being produced.

Find how much salt you use

Next, measure the amount of salt which you are using per regeneration. Where the salt is used in the form of brine, maintain the brine at a specific gravity of 23°—24° Bé, which is equivalent to 18½ pounds of NaCl per cubic foot. Measure the amount of brine withdrawn. From this the actual salt consumption can be calculated.

Measure zeolite bed

Next, determine how much zeolite there is in your softener. Open the manhole, and probe the bed with a long rod to a point where the rod meets increased resistance, which indicates that it has penetrated the zeolite bed and is being resisted by the gravel. Make such probings at several points and average them. Knowing the depth of the bed, you can then calculate its volume, based upon the diameter of the softener. Work this out in cubic feet.

How to check efficiency

Now here is how you check the efficiency of your softener. Each cubic foot of zeolite should remove a rated number of grains of hardness. You know the hardness of your raw water supply, so that the number of grains of hardness contained in each 1,000 gallons of water is easily checked. Calculate the amount of hardness being removed by each cubic foot and see if this is up to rating.

If your softener is delivering less than its rated output, send samples of zeolite to us for analysis. Take one sample from the top of the bed, one 9 inches down and one 18 inches down. The consumption of salt should not be in excess of one-half pound per 1,000 grains of hardness removed, per regeneration. If more salt than this is needed, it is an indication that the zeolite is not functioning properly.

Write to Permutit for free Check Chart

You can make these tests yourself or send the information to us and we will make recommendations as to what your plant requires. Easier yet, we have prepared a Check Chart on which you can put the data in proper order so as to save you time and make our recommendations more specific.

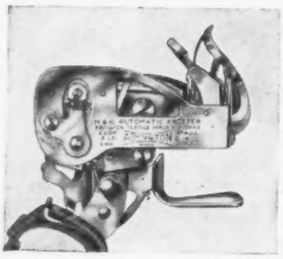
Permutit's coast-to-coast staff of field engineers will be glad to cooperate with you in keeping your equipment operating efficiently.

Write to: The Permutit Company, Dept. B, 330 West 42nd St., New York, N. Y. In Canada: Permutit Company of Canada, Ltd. . . . Montreal . . . Toronto . . . Winnipeg . . . Calgary.

PERMUTIT

WATER CONDITIONING HEADQUARTERS

ABINGTON WEAVER'S KNOTTER



Unique advantages speed production

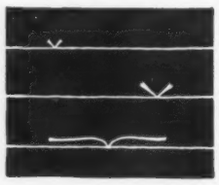
Note the following unmatched combination of valuable features:

1. Ties a weaver's knot, positively non-slip.

2. Tails automatically scissor clipped, always uniform.

3. Tails can be regulated for any length from 5/16" down to minus 1/16".

4. Tight, compact knots so small as to be acceptable in place of adhesive splice.



Request Knotter Catalog

SEND bobbin or fair sample of yarn, and we will return free SAMPLE KNOT CARD.

ABINGTON

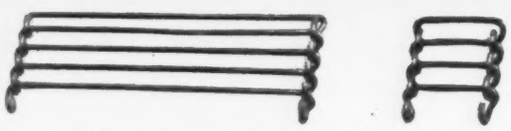
ABINGTON TEXTILE MCHY. WKS., ABINGTON, MASS.

Card Strippers — Yarn Dyeing Systems — Weaver's Knotters

OFFICES AT BOSTON, MASS. • CHARLOTTE, N. C.

Opportunities...

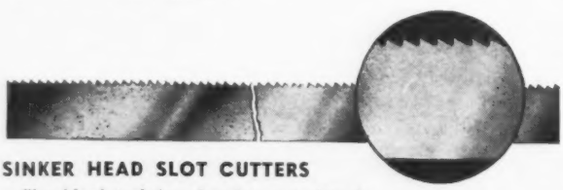
TO IMPROVE YOUR PRODUCT AND SAVE YOUR MONEY...



NARROWING CHAIN

Accurately made from high grade material—built to last and to hold its shape.

Send for bulletin giving full details on these and other products.



SINKER HEAD SLOT CUTTERS

The ideal tool for cleaning out slots in sinker and divider heads. Made in all gauges. Each one comes in a leather carrying case.

THOMAS & SKINNER

STEEL PRODUCTS COMPANY

1119 East 23rd Street — Indianapolis, Indiana

NEWS ABOUT MEN

president and secretary of Avondale Mills, Sylacauga, Ala.

J. S. Donaldson is dissolving his own velvet selling house, known as J. S. Donaldson, Inc., New York, and as of Dec. 1 joined the firm of A. Wimpfheimer & Bro. as vice-president and general sales manager.

Robert P. Sweeny, who has been active as an operating executive in textile mills in both the North and the South, has been appointed chief of the Textile Staff, Bureau of Foreign & Domestic Commerce, at Washington. Mr. Sweeny went to Clemson College and later successively filled responsible positions as superintendent, general superintendent, and manager, of several textile mills.

W. P. Cody, for some years superintendent of Lima (Ohio) Woolen Mills Co., has been promoted to plant manager.

Morris Blackman has been elected vice-president in charge of operations of Allied Textile Printers, Paterson, N. J., and **Charles Sabriskie** has been made assistant secretary. **Arthur Nazzaro,** who has been treasurer, has resigned and is retiring from the industry.

Phillip Leff, of National Spinning Co., has been elected president of Wool Knit Associates, New York. **Herman G. Lustfield** is secretary.

Alan B. Sibley, vice-president and treasurer of Judson Mills, Greenville, S. C., has been elected treasurer of Abbeville Mills, to succeed **F. S. Nicholas** who has entered the Army. **Roger Milliken** is now president of Abbeville.

H. Irwin Moraff and **George W. Henderson** have formed a commission sales agency under the name **Henderson-Moraff Co.,** with offices in 40 Worth St. Mr. Henderson was at one time with Amory, Browne & Co. and more recently with the Trust Co. of Georgia; Mr. Moraff was formerly head of Moraff, Craig Co.

I. B. Covington, vice-president and superintendent of Wade Mfg. Co., Wadesboro, N. C., has been relieved of his duties of superintendent at his request because of ill health. **T. D. Flack** has been appointed to fill this place.

J. Emmett Warren, assistant vice-president of Avondale Mills, Sylacauga, Ala., has been promoted to vice-president.

James H. Matthews, for the last 14 years cotton buyer for Gaffney (S. C.) Mfg. Co., has become associated with Spartan Mills, Spartanburg, S. C., and has moved to Spartanburg. He will continue to give part of his time to the Gaffney Mfg. Co.

W. T. Dresler, New York selling agent for Decorative Fabrics Co., Pawtucket, R. I., has been elected a vice-president of the company.

Joseph Ward, overseer of spinning, Lymansville Co., Lymansville, R. I., has been appointed to a similar post at the Peace Dale (R. I.) Mills.

Foster Ellingwood, formerly connected with American Woolen Co., has been appointed superintendent of Lawrence Blanket Mills, Webster, Mass.

S. L. Stack has resigned as superintendent of Father George Mill, Sanford, N. C., to become general manager of the Winton Mills, Fort Valley, Ga., and the G. & B. Yarn Mill, Cottondale, Ala.

Miss Mae E. Daly has been named assistant secretary of the New York Cotton Exchange, the first woman to hold a titular executive rank on this exchange.

J. R. McAlpine, for 15 years secretary-treasurer of Pee-Dee Mfg. Co., Hartsville, S. C., has become associated with Springs Cotton Mills, Lancaster, S. C.

Elmer S. Bonner has been appointed director of the New York Cotton Exchange Service Bureau. He has been with the Exchange Service Bureau over 12 years and served as assistant to **Alston H. Garside,** former economist of the Exchange.

Philip Wick has resigned as manager of the Fabrics Division of Van Raalte Co., Inc., New York, and will engage in business on his own account.

Frank R. Simmons has been elected secretary of Mauney-Steel Co., Kings Mountain, N. C.

Harry C. Oppenheimer has resigned his connection with the OPA, but will continue as a consultant and expects to remain in Washington for the present.

J. H. Daly who was head of the Rayon Section of the OPA has been appointed acting price executive of the Primary Products Branch of the Textile, Leather and Apparel Division. **Frederick Neiderhauser** has become acting head of the Rayon Section.

George W. LeValley has been elected president and general manager of Narragansett Finishing Co., Westerly, R. I.

William Goldsmith, Jr. has resigned as production manager of Renfrew (S. C.) Bleachery, and has been suc-

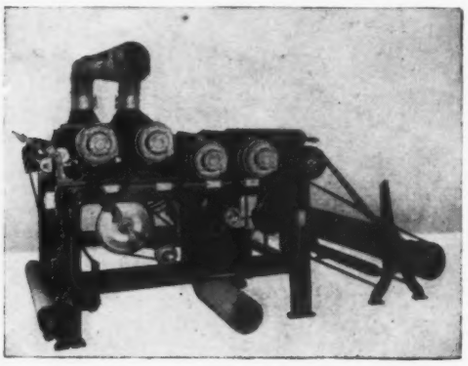
TO THE MEN AND WOMEN OF THE UXBRIDGE WORSTED CO., INC. PLANTS FOR THEIR "GREAT WORK IN PRODUCTION OF WAR MATERIAL"

The Army-Navy "E" Pennant . . . symbol of American industrial achievement . . . has been awarded to six units of the Uxbridge Worsted Company. This award is more than a gratifying honor for past performance. It is a pledge for the future . . . a pledge of greater effort, greater production. Each of the members of the various Uxbridge units . . . operatives and management alike . . . has accepted the Army-Navy "E" award as a personal honor and a spur to even bigger achievement. To each of us it is a bright reminder that we are playing our own individual part in the drive for Total Victory.

UXBRIDGE WORSTED CO., INC.

UXBRIDGE, MASSACHUSETTS

For BETTER and FASTER SHEARING



TYPE CMR AUTOMATIC SHEAR

for Cottons, Rayons, Spun Rayons and Silks

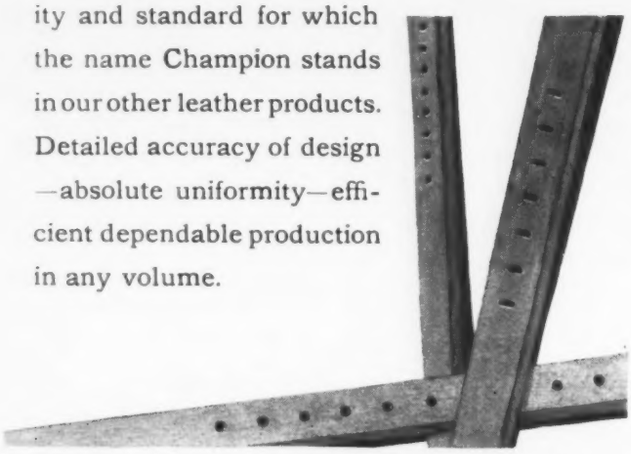
- **Patented Electronic Timing Device**
- **Patented Automatic Seam Protector**
- **Built-in Motors for the Cutters**
- **Improved Built-in "Vibrate" Motion**
- **Improved Lubrication for Cutting Edges.**

Send for CATALOG NO. 7 showing machinery for Cotton and Rayon Fabrics for the war effort and essential civilian needs.

Curtis & Marble
MACHINE COMPANY
WORCESTER, MASSACHUSETTS
Branch Offices: NEW YORK · PHILADELPHIA · GREENVILLE, S. C.

LOOM STRAPPING
Champion Quality

The CHAMPION Textile Leather line includes loom-strapping of the same quality and standard for which the name Champion stands in our other leather products. Detailed accuracy of design—absolute uniformity—efficient dependable production in any volume.



W. D. DODENHOFF COMPANY
619 RUTHERFORD STREET
GREENVILLE, SOUTH CAROLINA

NEWS ABOUT MEN

ceeded by **David Getaz,** formerly assistant production manager.

William A. Thompson, overseer at Quissett Mill, New Bedford, Mass., has been named assistant superintendent.

Warren A. Seem has become sales representative and technician of the Atlantic Rayon Corp. in the Pennsylvania territory.

Allan C. Emery, treasurer Emery & Conant Co., Inc., Boston, has been elected president of the Boston Wool Trade Association, succeeding **Percy E. Sheldon. Lawrence P. Hills** was elected vice-president and **C. Willard Bigelow** secretary-treasurer. Elected to the executive committee were: **Malcolm Green, Herbert W. Kendall, Harold T. Lindsay, Jr., Gordon N. McKee, Vincent P. Roberts, Harry A. Tilton** and **Gilbert P. Wright.**

Arthur K. Stewart, of Stamford, Conn., has been made agent of the American Thread Co. plant at Holyoke, Mass. He succeeds **Frederick W. Prentice,** who has resigned after 41 years with the company.

B. C. Baker, formerly manager of Kershaw (S. C.) plant of Springs Cotton Mills, has been named manager of the Eureka, Springstein and Gayle plants at Chester, S. C.

Earl B. Busenberg, chief chemist of Philadelphia (Pa.) Rubber Works Co., reclaim division of B. F. Goodrich Co., has been loaned to the Government to serve on the staff of technical consultants assisting **William M. Jeffers,** U. S. rubber director.

Clinton M. Powell has accepted position of manager of Balston Yarn Mills, Lincolnton, N. C. He was formerly with the Charlotte, N. C., office of H & B American Machine Co.

Albert C. Phelps, appeals referee for the South Carolina Unemployment Compensation Commission, has resigned to accept the position of personnel director for all of the units of Brandon Corp., and will maintain headquarters in Greenville.

E. G. Speir, manager of Ashland Corp., Jewett City, Conn., has been made manager in charge also of Seminole Mills, Clearwater, S. C. **Samuel F. Winsper, Jr.,** has resigned as manager and superintendent of Seminole Mills and has been succeeded by **W. Gaines Huguley, Jr.**

G. H. Dunlap has been appointed an associate to **John T. Wigington,** director of the Division of Research, Cotton-Textile Institute. Mr. Dunlap will be located at the Textile School of Clemson (S. C.) College where he has been an instructor in carding and spinning for 13 years. He is the co-author of two technical books and has been engaged on research problems.

G. H. DUNLAP, now associated with the Cotton-Textile Institute's Division of Research

Charles Reynolds has been promoted from superintendent to general superintendent of Spindale (N. C.) Mills.

Carl Richardson, secretary of the Rushton Mills, Griffin, Ga., has been promoted to general manager and will serve in this capacity along with his duties as secretary.

Z. G. Willis, who has been director of vocational work at Greenwood (S. C.) High School for the last few years, has resigned to accept a similar position with Inman (S. C.) Mills and Riverdale Mills, Enoree, S. C.

Ralph O. Warnken has joined the credit department of Riverside & Dan River Cotton Mills, Danville, Va., and will work with **L. H. Browder,** credit manager, and **J. L. Kaiser,** his assistant.

Delmar F. Reynolds has resigned his position with W. E. McKay Co., and has become a member of the sales force of Riverside & Dan River Cotton Mills, Danville, Va.

V. J. Thompson, formerly of Griffin, Ga., has become superintendent of Laurens (S. C.) Cotton Mills.

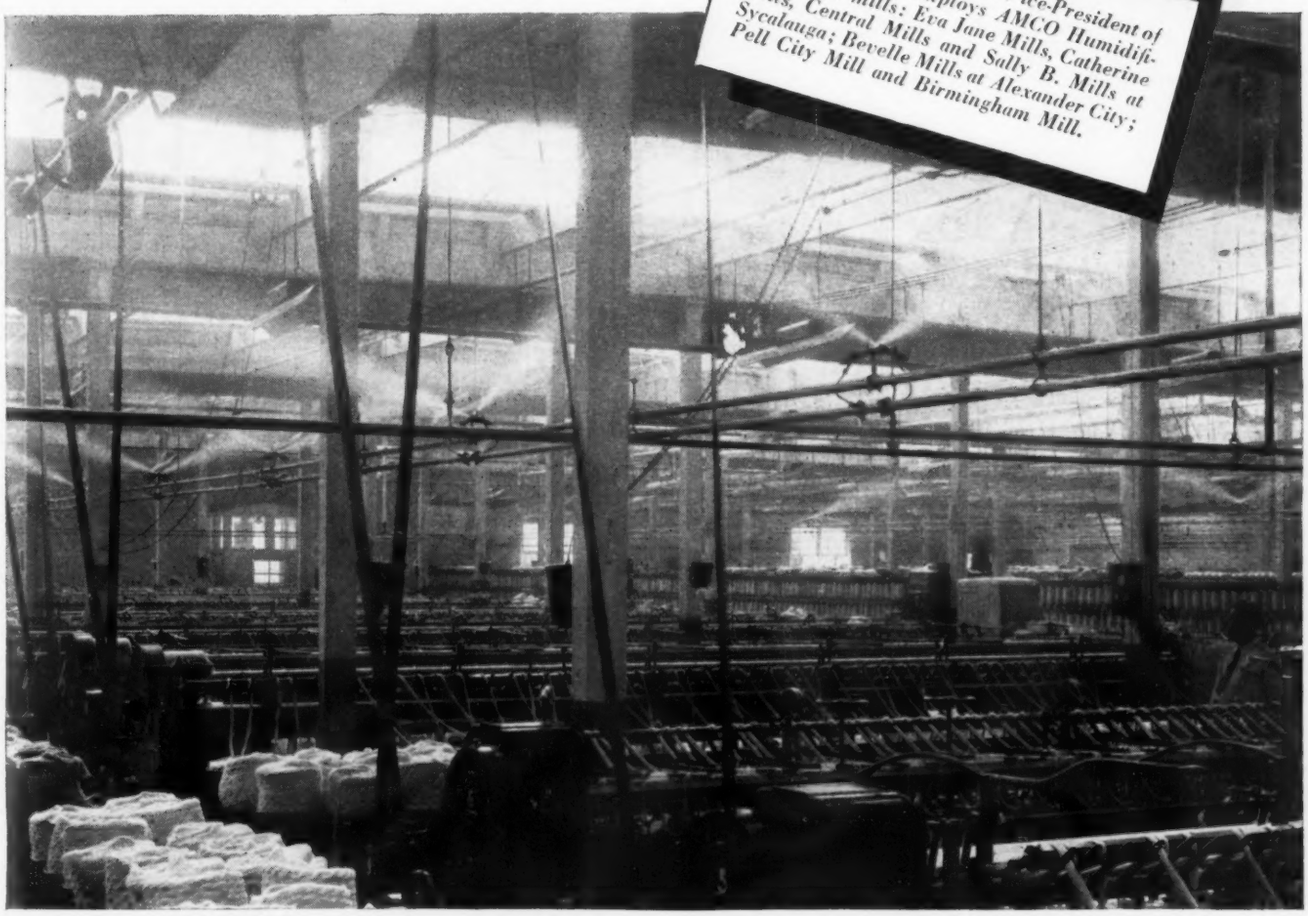
A. B. Hammond has accepted the position of superintendent of Berryton (Ga.) Mills.

Irving L. Blaylock, formerly overseer of spinning at Erlanger Mills, Lexington, N.C., who entered another business for a short time, is now superintendent of spinning, carding, etc., at the three plants of Mooresville (N. C.) Cotton Mills.

"WE ARE DELIGHTED WITH THE AMCO INSTALLATION . . ."

says Hugh M. Comer of Avondale Mills

Hugh M. Comer, Executive Vice-President of Avondale Mills, employs AMCO Humidification in 7 mills: Eva Jane Mills, Catherine Mills, Central Mills and Sally B. Mills at Sycalauga; Bevelle Mills at Alexander City; Pell City Mill and Birmingham Mill.



In seven different units of Avondale Mills, AMCO Self-Cleaning Atomizers and Controls have recently replaced old humidifying systems. The important results are stated in a letter from Hugh M. Comer, Executive Vice-President of Avondale Mills:

"Since these jobs have been completed, we find that this atomizing equipment has greatly aided in increasing production, and has reduced to some extent the waste and seconds. We are delighted with the installation you have made."

This is typical of results in hundreds of other AMCO installations. Modern AMCO Atomizers deliver finely atomized spray in automatically controlled quantity, without drip or feathering down. They hold humidity on the button. And their self-cleaning feature for both the air and water nozzles reduces maintenance to a minimum.

Learn what AMCO can do to speed up production and cut costs on heavy war goods production in your plant. Let AMCO Engineers make a survey and report. American Moistening Company, Providence, R. I. — Atlanta, Boston, Charlotte.

Amco
HUMIDIFICATION

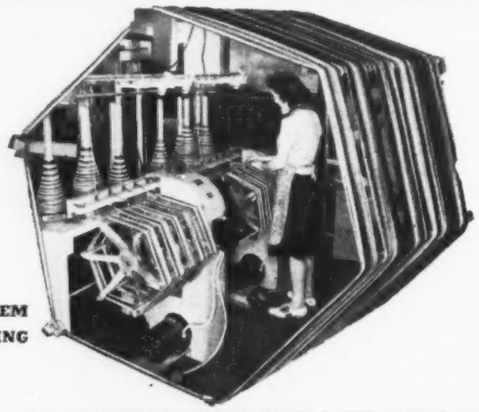
The Finished Product is the Real
Test of Wet Processing Effectiveness
FOR HOSIERY AND UNDERWEAR
FOR YARNS AND PIECE GOODS
FOR WOOLENS AND WORSTEDS
BURK-SCHIER

For twenty years, Burk-Schier wet-processing agents have met the test of chemical effectiveness by the quality of the finished products which they have helped to produce. Textile Manufacturers have found Burk-Schier wet-processing agents most effective and economical for scouring, bleaching, dyeing and finishing. There is a Burk-Schier product made to suit your needs.

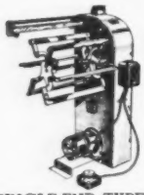
BURKART-SCHIER CHEMICAL CO.

BURK SCHIER CHATTANOOGA, TENNESSEE BURK SCHIER

PENETRANTS • SOFTENERS • SOLUBLE OILS • FINISHES



FIDELITY
TWIN-UNIT SYSTEM OF SKEIN REELING
TWO TYPES

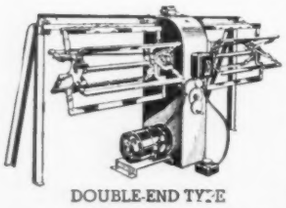


SINGLE-END TYPE

FIDELITY SKEIN REELERS
Speed Production with
30- to 50-second doffing cycle

So that production of odd and regular lots of yarn that require special treatment may be speeded . . . FIDELITY offers a time- and labor-saving method of skein reeling.

The Twin-Unit System—30- to 50-second doffing cycle—keeps operators continuously occupied, with less operator fatigue, with work that counts for production...namely, the taking off of finished skeins and the starting of new ends. No wait for winding. Short reels, each with a free end, make doffing easier and faster . . . results—new high rates of output at lower costs. ***Write for Bulletin.***



DOUBLE-END TYPE

FIDELITY MACHINE COMPANY
3908-18 Frankford Ave., Philadelphia, Pa.

Textile Men in Armed Services

E. A. Sale, president of Sale Knitting Co., Martinsville, Va., recently commissioned a major in the army, has reported at Camp Lee for active duty. Mr. Sale announced that arrangements had been made with Henry J. Tully & Co., New York, selling representatives of the mill for the last several years, to take over his interests, responsibilities and duties to the company during his absence.

William D. vanD. Jewett, formerly of Grosvenor-Dale Co., North Grosvenor-Dale, Conn., has accepted a commission as major in the United States Marine Corps and is now at San Diego, Calif.

Frank M. Steadman, major attached to the Philadelphia Q.M. Depot, has been promoted to lieutenant colonel. Also connected with the Depot, First Lieutenants **George A. Litchfield** and **Ely R. Callaway, Jr.,** have been promoted to rank of captain. Second Lieutenant **R. Ruskin Schwartz** has been promoted to First Lieutenant.

E. O. Kruegel, assistant to the general manager of Francis Willey & Co., Boston, and **James D. Hammett,** treasurer of Chiquola Mfg. Co., Honea Path, S. C. have been commissioned second lieutenants in the Quartermaster Corps, U. S. Army.

Philip B. Fleming, known to many men through his service as Administrator of the Wage-and-Hour Division, has been promoted from colonel to major-general. He heads the Federal Works Administration.

Albert Zimmerman, of Ott & Zimmerman, Philadelphia, has been commissioned a lieutenant, senior grade, in the Navy.

Lieut. Martin Erianger, USN, secretary of N. Erlanger Blumgart & Co., New York, was aboard the aircraft carrier Wasp when she was sunk in the Solomon Islands on Sept. 15. While home on leave recently Lieut. Erlanger was tendered a dinner by his friends and business associates.

Clarence Rosenbaum, sales representative in Philadelphia for the Sea Island Mills, Inc., has been inducted into the Army.

Jack Poulson, assistant sales manager of Pepperell Mfg. Co., New York, has been commissioned a lieutenant, senior grade, in the Navy.

C. K. Evans, of Mill Factors Corp., New York, has been commissioned a captain in the Army Specialists Corps attached to the Military Intelligence Service.

Harold R. Tanney, formerly salesman for Botany Worsted Mills, New York, has

WILLIAM A. McCAIN (left), who as brigadier-general was commanding officer of the Philadelphia QM Depot until last June, having served a number of years in that capacity, has been awarded an Oak Leaf Cluster to add to his Distinguished Service Medal. Presentation was by Maj.-Gen. Milton A. Reckord (right), commanding the Third Service Command, on Nov. 27. General McCain has been retired as a colonel.

There's double meaning in this picture: America needs your help in relieving war-overburdened transportation facilities. Cooperate fully with the transportation committee of your Local Defense Council; help keep them moving!

Not much room for anything that doesn't *help win this war!*

If it isn't for our armed forces or those of our allies . . . If it isn't for our war production program . . . If it isn't an essential to sustain the health and fighting strength of the people of the United Nations . . . And, there's not enough to go around . . .

We must learn to do without it!

The Textile industry, one of the first to feel the effects of this axiom of modern warfare, has led the country in sacrifice of self-interest – with patriotic cooperation in programs of conversion, production expansion, conservation and materials recovery.

Further, the industry, with typical American ingenuity and vigor, has not only fully met huge war needs, but has managed to maintain some production on civilian goods.

Naturally, our war duty, like yours, is to fill first needs first. But, our second consideration is to make available as much yarn as possible. This we are doing, and, we are distributing it as widely and as equitably as can be done.

ABERFOYLE MANUFACTURING COMPANY
123 South Broad Street, Philadelphia, Pa.
— and in the South
ABERFOYLE MANUFACTURING COMPANY
Belmont, North Carolina
Representatives in principal textile centers of the world

★ Enlisted for the duration: *WEAR-TWIST, the Domestic Mercerized Lisle — DURENE 2-Ply Mercerized Cotton Yarn — COMETCORD 4-Ply Mercerized Yarn for 6 x 3 Lines — S-P-Y, the Moisture Resistant Mercerized Yarn — NEOPHIL Nylon Thread — PREFERRED BRAND Seaming & Looping Thread — ENTWIST, Mercerized Cotton Yarn & Nylon Twisted Combination — DYED YARNS of every description.*

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AMERICA'S OLDEST MERCERIZERS OF FINE COTTON

To Textile Dyers Doing A War Job...

IN CLEANING STAINLESS STEEL EQUIPMENT AVOID MATERIALS THAT CAUSE CORROSION

Do not use ordinary steel wool or steel brushes on stainless steel equipment. Steel particles rubbed off the steel wool or brushes may become imbedded in the stainless steel. The particles will rust and discolor the stainless steel surface and can be the focal point of serious corrosion.

You can avoid the contamination of dye solutions by using only stainless steel wool or brushes for cleaning. Watching details like this will help you keep your equipment in good working condition for your wartime assignment. When maintenance problems arise let us know about them. Perhaps one of our engineers can give you a "helpful maintenance" suggestion.

All orders subject to Government Priority Regulations.

★ Specialists in Manufacture of Stainless Steel Dyeing Equipment

S. BLICKMAN, INC.

208 GREGORY AVE., WEEHAWKEN, N. J.

EST 1889

Wax

Soldiers' Uniforms?

Yes! With

DRAX

Today many an army uniform is waxed with DRAX, Johnson's Water Repellent Textile Finish. Uniforms impregnated with this wax emulsion become stain and dirt resistant, water repellent. They're smarter looking, easier to launder.

DRAX is a stable, aqueous emulsion of waxes and noncritical aluminum salts and emulsifying agents. Does not change color or "hand" of textiles. May be used on vat or sulphur-dyed textiles. Non-flammable. Inexpensive. Supplied to meet Army Quartermaster Department specifications.

Write for the facts about DRAX. Ask for free test samples.

S. C. JOHNSON & SON, INC.

Industrial Wax Division • Dept. T-122

Racine, Wisconsin

Buy United States War Savings Bonds and Stamps

NEWS ABOUT MEN

been commissioned second lieutenant in the Army Air Force.

Bayard U. Livingston, 3d, of the sales staff of Southeastern Cottons, Inc., New York, has joined the Navy and is now in training at Quonsett Pt., R. I.

Second Lieut. William I. Kent, of U. S. Marines, son of Everett L. Kent, president of the Kent Mfg. Co., Clifton Heights, Pa., was three times cited for valor during the early occupation of Guadalcanal.

Harry M. Arthur, Union, S. C., head of Excel Hosiery Mills, president of the Arthur State Bank, a veteran of World War No. 1, has been promoted to Lieutenant Colonel, and has been transferred from Fort Jackson, S. C., to Fort Benning, Ga.

James D. Hammett, treasurer of the Chiquola Mfg. Co., Honea Path, S. C., who recently completed special training at Camp Lee, Va., has been commissioned a second lieutenant in the Army Quartermaster Corps, and assigned to the Office of the Quartermaster General in Washington, D. C.

Donald R. Green, of Holyoke, Mass., former Farr Alpaca executive and veteran of World War 1, who is now in England with the AEF, has been promoted from major to lieutenant-colonel.

Leonard B. Reppert, formerly chemist at the Nitro, W. Va., plant of American Viscose Corp., until he entered the armed services, has been commissioned a second lieutenant at Chemical Warfare Service's Officer Candidate School at Edgewood Arsenal, Md. He entered the school as a corporal.

George E. Prime, plant superintendent at Warwick Chemical Co., West Warwick, R. I., for the last three years, has received an appointment as lieutenant (jg) in the United States Naval Reserve.

J. I. Taylor, Elizabethton, Tenn., who has been superintendent of textiles at the American Rayon Corp., has been commissioned a major in the Army supply service, and has reported at Washington, D. C., for special training.

Mervyn H. Sterne, Sylacauga, Ala., member of the board of directors of Avondale Mills, who was an army officer during the last World War, has been commissioned a major in the Army Specialist Corps.

David A. Wagstaff, Huntersville, N. C., formerly connected with the Whitin Machine Works, Whitinsville, Mass., and son of **O. L. Wagstaff,** superintendent of Anchor Mills Co., Huntersville, has enlisted in the Navy as a chief petty officer and is located at Norfolk, Va.

I. M. SCOTT, vice-president of Lee I. Robinson Hosiery Mills, Inc., Philadelphia, has been commissioned first lieutenant in the Army and has reported for duty at Camp Edwards, Mass.

T. D. Hancock, Gaffney, S. C., sales representative for the Southern Loom-Reed Mfg. Co., Inc., is now with the Army Air Corps and is located at Craig Field, Selma, Ala.

Eddie E. Jones, Jr., formerly a member of the office staff of Johnston Mfg. Co., Chattanooga, Tenn., and Charlotte, N. C., now serving in the armed forces, has been advanced to the rank of staff sergeant at the Olympia Army Air Base, Olympia, Wash.

C. Harold Poovey, sales representative for the Greensboro (N. C.) Loom Reed Co., has been accepted by the armored forces of the U. S. Army as an officer candidate and has reported for duty.

W. Clark Erwin, manager of the Atlanta, Ga., office of Reeves Pulley Co., for 5½ years, has joined the Navy with rank of lieutenant (JG) in the Aviation Division.

Lt. (JG) W. CLARK ERWIN, who was manager of Reeves Pulley Co.'s Atlanta office

PROMPT SHIPMENTS OF

Penn Salt

Caustic Soda

in special tank cars for efficient handling

● Greatly increased manufacturing facilities make Penn Salt Caustic Soda promptly available in practically any quantity. This is the dependable caustic, widely used and endorsed, and backed by 92 years of experience in producing superior chemical products for American industry.

In aqueous solution, Penn Salt Caustic Soda is supplied in specially designed Tank Cars—equipped with protective lining, special draining plates and easily accessible fittings. Penn Salt Tank Cars deliver clean caustic soda that can be quickly, safely and completely unloaded . . . to cut handling time and costs and reduce waste.

You can get Penn Salt Caustic Soda as 50% and 72-73% solutions in 8000-gallon tank cars; as a solid in 750 lb. drums; or in flake form in 400 and 100 lb. drums. Call on our technical staff for any assistance needed on handling problems.

Write for full information.

PENNSYLVANIA SALT
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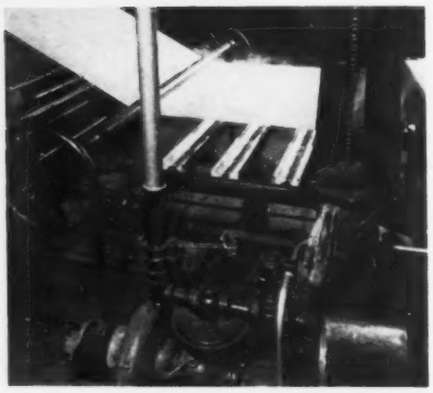
NEW YORK • CHICAGO • ST. LOUIS • PITTSBURGH • WYANDOTTE • TACOMA

INFRA RED-RAY SPEED DRYING



Infra-red ray drying gives greater speeds with lower operating costs. Write for information—today.

2 to 5 TIMES FASTER

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Manufacturers of Infra-Red Ray Combustion Equipment

455 WEST 45th STREET NEW YORK, N. Y.

DRUMMOND SOAP

ARMY

NAVY

MARINES

AIR FORCE

COAST GUARD

All the qualities you look for in a fine Textile Soap. . . . A high-body product of low alkali content. . . . No filler of any kind. . . . A high binding quality that results in minimum flocking. . . . Saves on steam and water because it rinses easily and completely. . . . Better fulling and scouring. . . . Leaves fabric perfectly clean with softest fuel, better hand, brighter colors and whiter whites. . . . Want to try it? Just write us today for a free working sample and test Drummond Soap on your own goods.

LIBERTY—PEACE—SECURITY

They're Worth Every Bond Your Money Can Buy

Standard Soap co. of camden

Charlotte, N. C. CALD. M. LITTLETON 426 PARK TERRACE

205 South 2nd St. Camden, N. J.

Woonsocket, R. I. G. TANGUAY 21 HARRIS AVE.

Obituary

Walter S. Wyman, 68, president of the New England Public Service Co., Augusta, Me., public utility pioneer, banker and executive prominent in the development of New England Industries, Inc., died at Augusta on Nov. 15. Mr. Wyman played a vital part in the transformation of Manchester, N. H., from a "one-industry" city largely dominated by the Amoskeag Mfg. Co., to a multi-industry community centering about Amoskeag Industries, Inc. Important textile mills were included in the far-flung enterprises under his direction. He was president of the Edwards Mfg. Co., the Androscoggin Mill, Hill Mfg. Co., Bates Mfg. Co. and York Mfg. Co., as well as president of the Central Maine Power Co. and the New England Public Service Co.

August Nordman, 59, president of Finer Full-Fashioned Hosiery Co., Charlotte, N. C., for 18 years, and before that superintendent of Nebel Knitting Mills, Charlotte, died Nov. 4.

Robert W. Sayles, 64, president of Baltic (Conn.) Mills Co., and a nationally known geologist, died on Oct. 23 at a Boston hospital. He was born in Pawtucket, R. I., and was graduated from Harvard College in 1901. From 1907 to 1928 he was curator of the geological museum at Harvard.

Thomas Hodgson, owner of Concord (Mass.) Worsted Mill and president of the Thomas Hodgson & Sons Machine Shop, died in Concord, N. H., Nov. 20.

Oscar A. Geier, 60, of New York, a patent attorney specializing on matters connected with textiles, and treasurer of the American Association of Textile Technologists, died Nov. 5. He attained international recognition as a long-distance runner and as a bobsled champion.

Harmon V. Cornelius, 56, manager of N. H. Aronsohn Co., New York, died suddenly Nov. 9.

Edmund G. Dalton, 52, president of the Merchants Wool Scouring Co., East Boston, Mass., died at Norwood, Mass., on Nov. 26.

J. E. Burnside, 82, secretary and a director of Grendel, Panola and Anderson Cotton Mills, died Nov. 25 at his home in Greenwood, S. C.

Marion B. Kohlman, 70, a pioneer converter with the old firm of Charles Kohlman & Co., New York, but retired for about 15 years, died early last month.

Emil A. Untersee, 54, General Electric Co. textile mill engineer, died suddenly at Schenectady, N. Y., Nov. 19. He had been associated with GE since 1909 when he entered the mill power section of the company's Boston office.

James H. Bolton, 77, who retired eight years ago as manager of the National Silk Dyeing & Printing Co., Paterson, N. J., died recently.

George Newell Armsby, for many years a director of Industrial Rayon Corp., and interested in numerous other industrial firms, died recently.

Walter McCook, of Walter McCook & Sons, Philadelphia, Pa., dealers in yarns for machine and hand weaving and knitting, died recently.

Elgar A. Brick, 75, textile technician and consultant for Onyx Oil & Chemical Co., Jersey City, N. J., died recently. He began his career with Joseph Bancroft & Son and Aberfoyle Mfg. Co., but had been with Onyx for 31 years.

Walter G. Ruggles, 72, president and founder of the Ruggles-Klingman Mfg. Co., Reading, Mass., died Nov. 14.

Fred E. Batcheller, 81, former purchasing agent of Pacific Mills, Lawrence, Mass. died at Deland, Fla., Nov. 14.

John M. Strong, 55, for 17 years with the yarn division of Cannon Mills in Philadelphia and New York, died Nov. 18.

Wolfgang D. Richter, 71, pioneer designer and manufacturer of full-fashioned hosiery machines, died recently in Mount Airy, Pa.

George F. Langevin, 48, dealer in textile machinery, died last month in Lowell, Mass.

Samuel Rush Greene, 48, superintendent of Algodon Mills, Bessemer City, N. C., died Nov. 11.

Ernest E. Ford, 56, an overseer of Rhodhiss (N. C.) Mills for the last 18 years, died Nov. 9.

Robert K. Wilburn, 68, for 42 years superintendent of the card room of Inman (S. C.) Mills, died recently.

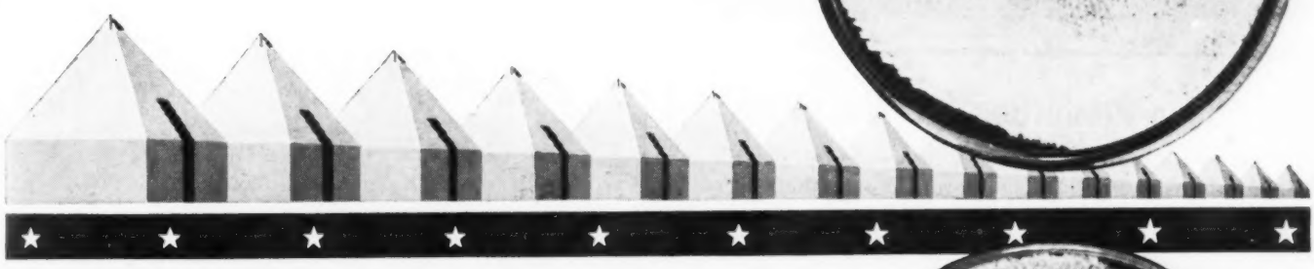
Arthur Goldthorpe, 73,

DOWICIDE

INDUSTRIAL GERMICIDES AND FUNGICIDES

L-O-N-G-E-R LIFE FOR ARMY DUCK!

Mildew growth on untreated duck exposed to normal atmospheric conditions.



ARMY DUCK is vital to our armed forces. To be able to give longer life under the varied climatic conditions to which fabric will be exposed makes it necessary that mold growth be prevented. DOWICIDE*, a group of chlorinated phenol derivatives, manufactured by The Dow Chemical Company, is providing this vital protection. When DOWICIDE is incorporated in compositions used for finishing, it furnishes effective and long lasting protection against mildew and rot.

The inhibiting action of DOWICIDE is thorough and entirely dependable under all atmospheric conditions—from arctic to tropical. Thus another Dow product proves indispensable to our all-out effort by improving the quality of army duck—giving longer life to the many thousands of army tents, tarpaulins and similar equipment.

For complete information write to the Dowicide Division.

*Trade Mark Reg. U. S. Pat. Off.

Duck exposed to normal conditions—treated 1% DOWICIDE—no mold growth.

DOW

THE DOW CHEMICAL COMPANY, MIDLAND, MICHIGAN

New York · St. Louis · Chicago · San Francisco · Los Angeles · Seattle · Houston

WHITMAN YARNS

WORSTED • COTTON • SPUN RAYON

ARLINGTON MILLS
LAWRENCE, MASS.

•

MONOMAC SPINNING CO.
LAWRENCE, MASS.

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NONQUITT MILLS
NEW BEDFORD, MASS.

WILLIAM WHITMAN COMPANY, INC.
NEW YORK BOSTON PHILADELPHIA CHARLOTTE

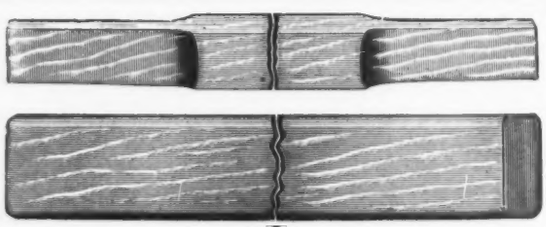
100% Production for War Work

Scott Testers are going 100% into war work plants—and they can help a plant greatly toward the goal of operating at 100% of capacity! 60 models, for tensile, burst, hysteresis, crepeage, twist, flexing, etc.

SCOTT TESTERS

*Registered Trademark

HENRY L. SCOTT CO. 95 Blackstone St. Providence, R. I.



A

DYE STICKS

Since 1900 we have made high quality true-form oven-seasoned dye sticks for all standard machines. We can fill your needs today to meet any requirement. Write

FRANK BAILEY Cedar Brook, N. J.

NEWS ABOUT MEN

formerly for many years superintendent of the Somerville (Conn.) Mfg. Co. and former member of the Enfield (Conn.) Board of Finance, died Nov. 20 at Stafford Springs.

C. Garland Carpenter, 55, co-owner of the Carpenter Hosiery Mill, Wytheville, Va., and of the Rutledge (Tenn.) Hosiery Mill, died at his home in Wytheville Nov. 17.

Joseph Belanger, 62, night overseer at Cabot Mfg. Co., Brunswick, Me., is dead. He was a native of L'Islet, Canada, and came to Brunswick when he was nine years old. He was the director of St. John's Band for 40 years.

George B. Harris, 91, Henderson, N. C., director of Henderson and Harriet Cotton Mills, prominent in the tobacco warehouse field and as a banker, died Oct. 28.

John Archer Mitchell, 45, senior vice-president of Jordan Mills, Columbus, Ga., died recently.

George H. Hatch, sales manager of Greenwich Bleachery, East Greenwich, R. I., died last month.

John F. Worthington, 58, general manager of the Philadelphia plant of Ashworth Bros., Inc., died last month.

Frank J. Weschler, vice-president of the Chain Belt Co., Milwaukee, and general manager of Baldwin-Duckworth, a division of Chain Belt Co., at Springfield and Worcester, Mass., died Nov. 10 in Worcester.

George M. Simmons, 59, vice-president and director of National Starch Products Inc., died suddenly Oct. 26 at his home in Brooklyn, N. Y. He was an outstanding authority in the adhesive and starch industries.

Samuel P. Kenworthy, 70, senior partner of Thomas K. Kenworthy's Sons, Philadelphia, died Nov. 15. He was recognized as one of the oldest carpet wool men in the business.

Prof. A. Sydney Rollings, head of the department of industrial design at the Rhode Island School of Design, Providence, died suddenly in that city on Oct. 23. He was a native of Knoxville, Tenn., and had held his recent post for ten years.

Ernest E. Dallis, 61, of Atlanta, Ga., public relations counsel for the Cotton Manufacturers Association of Georgia, the Cotton Manufacturers Association of Alabama, and the American Cotton Manufacturers Association, died Nov. 2.

John Brooks Kingston, 69, owner and operator of Anchor Mills, Shelbyville, Tenn., for 40 years, died Nov. 9.

Bennet B. Bristol, 74, who with his brother, Edgar H. Bristol, founded the Industrial Instrument Co. in 1908, which later became the Foxboro Co., died at his summer home at Falmouth Heights, Mass., Nov. 10.

Cornelius Vanderbilt Truitt, 81, retired textile manufacturer, died Nov. 15 at La Grange, Ga., following a long illness. He was prominently identified with the industrial developments of LaGrange and served as president of Unity Cotton Mills, Unity Spinning Mills, of Elm City; Hillside Mills and Valway Waste Mills, now part of Callaway Mills. He also served as treasurer of Manchester Cotton Mills, and Milstead Mfg. Co.

Joseph E. Kelly, president and owner of Fairmount Dye Works, Inc., Woonsocket, R. I., died at Slatersville, R. I., Nov. 16.

J. A. Sharadin, 82, died at his home in Orwigsburg, Pa., Nov. 1. He was a pioneer in the Berks-Schuykill area in the manufacture of hosiery and underwear. He established his first plant, the Orwigsburg Knitting Mills on half-hose in 1892.

Arthur W. Smith, 79, head of Lincoln Webbing Co., Brockton, Mass., died in that city Oct. 17.

Charles G. Mosser, 65, president and treasurer of Windsor Knitting Mills, Hamburg, Pa., died Nov. 6.

Walker Gilmer Hamner, 56, representative for North Carolina and parts of South Carolina for several of the larger textile supply houses, died Nov. 15 at Gastonia, N. C.

Louis T. Stone, for many years before his retirement active in the selling end of the underwear trade, died last month in New York. He started with the old house of Clift & Goodrich, and later went into business for himself, forming the firm of Stone & Warren.

Walter E. Schultz, 53, owner of Milton (Del.) Hosiery Co., died recently.

Ernest W. Calfee, Pulaski, Va., a member of the boards of directors of Virginia Maid and Wallner Hosiery Mills and Paul Mills, and for 27 years mayor of Pulaski, died Oct. 27.

J. B. Johnson, formerly departmental head of several mills in Greenville, S. C., and more recently with Fairforest Bleachery, Clevedale, S. C., in a similar capacity, died recently.

THE AHCO PARADE OF TEXTILE FINISHING PROGRESS

AHCO
ACHOPEL
A water repellent emulsion which can be varied to suit requirements and made mildew resistant to Government specifications, if desired. Applied by the single bath method in quetch, padder, jig or beck. Does not destroy fabric porosity. Approved by John Q. Public many years before it passed the critical inspection of Uncle Sam.
AHCO
ACHOVEL
A substantive softener which does not alter shades or light fastness. Gives better softness and drape at less cost. Pure white—does not discolor or turn rancid. Resistant to washing and dry cleaning. Non-greasy, odorless, easy to apply.
AHCO
RESYNON
Gives fabrics extra body without stiffening. No baking. Improves brightness of colors; relatively permanent, economical, odorless; may be used with starches and gums.
AHCO
CONCENTAL
for Softening Cottons and Rayons. Highly concentrated, it reduces shipping, storage and container costs. Relatively small quantities required. A COMPLETE softener, it eliminates many items of inventory. Penetrates deeply, lubricates effectively. Completely soluble in water at 135° or over, leaves no scum, compatible with all starches, waxes, gums and resinous materials. Does not deteriorate with heat or age. Highly stable in hot or cold solutions and in presence of acetic acid.

Also ask us about numerous other AHCO PRODUCTS for sizing and finishing.

ARNOLD, HOFFMAN & COMPANY, INC.

Established 1815 *Plant at Dighton, Mass.*

PROVIDENCE, RHODE ISLAND

NEW YORK • BOSTON • PHILADELPHIA • CHARLOTTE

GLYCERIN

is rationed. If you are a user of glycerin as a hygroscopic agent, you should try our new

CORPOLIN

which is almost twice as effective as glycerin. It is a heavy, colorless and odorless liquid, non-volatile and non-inflammable. It is

AVAILABLE

without preference rating. Makes gums swell, exerts smoothing effect on starch paste, prevents gelatine and glue from gelatinizing.

THE AKTIVIN CORPORATION
50 Union Square, New York, N.Y.

★ ★

Engineers

J. E. SIRRINE & COMPANY
GREENVILLE SOUTH CAROLINA

INDUSTRIAL PLANTS • PAPER MILLS • TEXTILE MILLS • PLANS AND DESIGNS
STEAM UTILIZATION • TOBACCO FACTORIES • KNITTING MILLS • LOCATION STUDIES
APPRAISALS • REPORTS • WATER TREATMENT • WATER SUPPLY • SEWERS • POWER

★ ★

Simplified **DESIGN**
Flexible **POWER**
Better **EVAPORATION**
More sensitive **CONTROL**

SOUTHWORTH HUMIDIFIER

Experienced textile men who know the merits of previous models of Southworth Humidifiers have found improvements in Model D that make it even more reliable and efficient.
Extreme sensitivity of control, and an "airplane propeller" type fan for greater evaporation, are two outstanding features.

NOTE
This advertisement is to remind you to include Southworth Humidifiers in your after-the-war plans. Frankly, we are 100% on war work and cannot make humidifiers at the present time.

THE SOUTHWORTH MACHINE CO.
PORTLAND MAINE

TEXTILE MILL NEWS

Cotton Mill News

American Yarn & Processing Co. has under construction additional space for picker room, cards and twisters at its Union Mills unit, Maiden, N. C.

Berkshire Fine Spinning Associates, Providence, R. I., increased its sales 31.4% in the year ended Sept. 30, 1942, over the previous fiscal year, establishing a new high record; but its taxes rose 226%, with the result that the net income increased but slightly. For 1942, after taxes of $5,836,800 and $525,000 reserve, net income was $1,907,441. This compares with a 1941 fiscal year net income, after $1,791,342 taxes and $250,000 reserve, of $1,851,686. Sales in the 1942 year were $37,771,883 compared with $28,746,992 in 1941 and $18,163,074 in 1940.

Cabot Mfg. Co., Brunswick, Me., is considering an offer of $80 per share made to stockholders if 95% of the shares are turned in. Willard F. Staples, general manager of the mill, stated that if the transaction goes through the name of the ultimate owner would be made public.

Carver Textile Co., 222 Summer St., Boston, Mass., recently chartered with capital of $50,000, plans operation of plant for manufacture of cotton goods, including a division for production of cotton waste. John A Carver is president.

Consolidated Textile Corp. reports net profit after all deductions for fiscal year ended Aug. 31, 1942 of $436,097 compared with $215,066 for previous year.

Dora Mill, Cherryville, N. C., is equipping a new picker room and will provide for re-arranging the machinery in the carding and spinning departments.

Dover Mills, Shelby, N. C., are building extensions to be used for storage purposes.

Fulton Bag & Cotton Mills, Atlanta, Ga., has begun erection of one-story addition for warehouse for which general contract recently was awarded to A. K. Adams Co., Atlanta. Cost is reported over $20,000.

Harvart Plush Co., Fall River, Mass., is a new enterprise for commission warping and slashing, also beaming, quilling, coning and tubing. Arthur J. De Blois is president.

Holliston Mills, Inc., Norwood, Mass., have built a new storage tank and crib at their plant on Lenox Street.

Charles A. Maish Co., 1125-33 Bank St., Cincinnati, Ohio, manufacturer of bedding, is considering early rebuilding of plant, recently destroyed by fire, with loss reported in excess of $125,000, including equipment.

Mill Art Co., Spindale, N. C., Spindale, N. C., newly organized concern for the manufacture of canvas specialties, has installed eight looms and auxiliary equipment, as its initial machinery set-up. This equipment was purchased from Spindale Mills, Inc.

Monroe (Ga.) Cotton Mills have completed a two-story addition for increased production. New machinery installed includes about 12 new cards, a number of re-conditioned looms, winders, folders and auxiliary equipment.

Opelika (Ala.) Mills, Inc., have a $40,000 project under way, which includes re-modeling and repair of the main office building and community house, and the construction of 12 dwellings for operatives.

Randolph Mills, Franklinville, N. C., have completed construction of a weave room at No. 2 mill, and slashing and weaving and dyeing equipment has been removed to the new department.

Simmons Co., Kenosha, Wis., is making alterations and improvements in Building No. 95 at mill. General contract recently was let to J. Peter Larsen, Kenosha.

Victor-Monaghan Co., Walhalla, S. C., is repainting and repairing the 150 houses in its mill village.

Werthan Bag Corp., Nashville, Tenn., has installed two cloth printing machines.

West Point Mfg. Co., reports net profit after all charges for fiscal year ended Aug. 29, 1942 of $1,318,635 compared with $3,398,525 in previous years. Taxes were $5,738,750 and $3,372,504 respectively. The West Point company has established a medical department at Shawmut, Ala., which will serve the units of the company in Riverview, Fairfax, Langdale, Shawmut and Lanett, all in Alabama.

Whitney (S. C.) Mills plan extensive repairs and maintenance work on the mills, the contract having been awarded to the Fiske-Carter Construction Co., Spartanburg, S. C.

This Yarn will Weave Better

WHEN an operator on the Barber-Colman Automatic Spooler puts an end up in the clamp, it is the start of a process which leads to better weaving on the loom. The end from this bobbin is tied to the yarn on the cheese by a mechanical weaver's knotter that assures uniform, small knots with short tails. The winding is done at 1200 yards per minute with air friction only, to provide a uniform minimum tension and to retain all possible elasticity. Snick plates catch the gouts, slubs, and wild yarn and break out the end before such faults have a chance to be wound in. When yarn handled on Automatic Spoolers goes to the weave room, loom stops are substantially reduced, production is increased, weaving is improved, quality of product goes up, and costs go down. In addition, Barber-Colman Automatic Spoolers are easier on the operators because of handy working positions that keep fatigue at a minimum.

For Example . . .

The following production figures are taken from the spooler department of a mill now running fine combed yarn for war uses:

Count	60s
Ring	1½"
Traverse	5½"
Pounds per hour per Spooler	180
Beams per Cheese at 37,000 yds. per Beam	3

AUTOMATIC SPOOLERS • SUPER-SPEED WARPERS • WARP TYING MACHINES • TWISTER CREELS • MOISTURE CONTENT CONTROLS

BARBER-COLMAN COMPANY

ROCKFORD, ILLINOIS, U. S. A.

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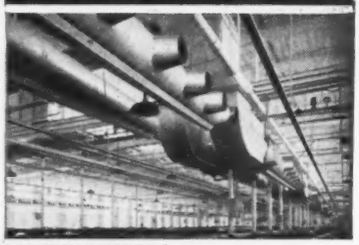
RYERSON CERTIFIED STEELS

Prompt Shipment from 10 Strategically-Located Steel-Service Plants... Principal products include—Alloy Steels, Tool Steels, Stainless Steel, Hot Rolled Bars, Hoops and Bands, Beams and Heavy Structurals, Channels, Angles, Tees and Zees, Plates, Sheets, Cold Finished Shafting and Screw Stock, Strip Steel, Flat Wire, Boiler Tubes and Fittings, Mechanical Tubing, Rivets, Bolts, Nuts, Washers, etc. Write for Stock List. Joseph T. Ryerson & Son, Inc. Plants at: Chicago, Milwaukee, St. Louis, Detroit, Buffalo, Cincinnati, Cleveland, Boston, Philadelphia, Jersey City.

AIR CONDITIONING

HUMIDIFYING
ATOMIZERS
UNIT SYSTEM
CENTRAL STATION
AIR FILTERS
HEATING
COOLING

ENGINEERS — EQUIPMENT FOR THE TEXTILE INDUSTRY



Bahnson System
AIR CONDITIONING ENGINEERS
THE BAHNSON CO. WINSTON-SALEM, N. C.

For 25 years we have been successfully solving the air-conditioning problems of the Textile Industry.

NOVELTY-YARNS
For
WEAVERS-KNITTERS
MONTGOMERY
WINDSOR LOCKS, CONN.
Designers and Spinners of Novelty Yarns

TEXTILE MILL NEWS

Wool Mill News

Alderman Top Mfg. Co., Holyoke, Mass., now owns its building, the former Farr Alpaca Co. No. 3 plant in Holyoke, Mass., free and clear. Robert Alderman, president of the three-year-old top manufacturing concern, has made the last payment of $1,500 to the Mechanics Savings Bank. This concern, founded by the late Eugene Alderman, took over the No. 3 plant of the Farr Alpaca for $50,000.

American Axminster Mills, Inc., Jasper & Huntingdon Streets, Philadelphia, have been chartered to manufacture and deal in textiles, etc. The incorporators are: William L. Matz, Edward Goldenberg and Evaline Freeman.

Bigelow-Sanford Carpet Co., Thompsonville, Conn., reports net sales for nine months ending Oct. 3 totaling $31,967,350. Sales for the corresponding periods of 1940 and 1941 were respectively $19,347,723 and $28,933,826. Net profits for this period of 1942 amounted to $1,060,282 as compared with $1,298,770 in the 9 months of 1940 and $1,502,136 in 1941.

Cherry Brook Worsted Co., Woonsocket, R. I., had its receivership terminated by court order on Nov. 10.

Gilet Carbonizing Co., Lowell, Mass., suffered $5,000 damage in a recent fire.

Kay-Bro Clothes, New York, has leased the 56-loom plant of Talcott Bros. Co., Talcottville, Conn., in a vertical integration project to turn out Navy pea jackets.

J. Milton Hagy Waste Works, Philadelphia, Pa., operating Fidelity Mills, have taken title to former factory of Cunningham Piano Co., on local site at Parkway and 50th St.

Harrisville (R. I.) **Combing Co.,** is altering a garage building to provide more office space. Arthur M. Vick, Providence, is completing the work.

Rohmer-Medford Wool Scouring Co., Medford, Mass., has awarded contract to J. F. Fitzgerald Construction Co., Boston, for construction of an underground disposal tank at 574 Boston Avenue. The tank will be of concrete 14x16 ft. and will cost about $5,000.

St. Louis Carpet Co., 239 North Euclid Ave., St. Louis, Mo., and St. Louis Carpet Weavers, same address, affiliated, have leased one-story building at 5190 Delmar Blvd., 50x150 ft., previously used as a laundry, and will remodel for rug and carpet production. Walter J. Harms is president.

Susquehanna Woolen Co., New Cumberland, Pa., has sold its mill and one warehouse to H. B. Marks & Sons Co., New York, for $75,600. Mill has been in receivers' hands since July.

Rayon & Silk Mill News

American Enka Corp., Enka, N. C., plans construction of guard houses around the plant grounds.

Automatic Winding Co., East Newark, N. J., has been authorized by Defense Plant Corp. to equip a plant at cost of $200,000. Title to these facilities will remain with DPC.

Bonita Ribbon Mills, Brewton, Ala., have installed new looms and auxiliary equipment, and 100 or more operatives have been added to the payroll.

Celanese Corp. of America reports net profit after all charges for first nine months of 1942 of $5,651,238 compared with $5,116,361 for similar 1941 period.

Darlington Fabric Co., Charlotte, N. C., has been bought for $500,000 by the Defense Plant Corp.

Industrial Rayon Corp. reports net profit after all charges for first nine months of 1942 of $1,506,403, against $1,706,251 for similar 1941 period.

Tubize-Chatillon Corp. reports net profit for first nine months of 1942 after all charges of $1,053,575 against $971,958 for similar 1941 period.

Susquehanna Mills report net earnings after taxes, etc., for year ended July 31, 1942, of $127,142 on net sales of $6,574,171.

Knitting Mill News

American Hosiery Co., New Britain, Conn., is planning early closing of mill, owing to difficulty in securing raw material. A special meeting has been called on Dec. 15, for stockholders to vote on a proposition to terminate business entirely.

Ashland (Pa.) **Knitting Mills** are making changes in mill machinery and equipment for manufacture of underwear for armed forces, as well as special light underwear for children. Additions will be made to working force when plant conversion has been completed.

Beaunit Mills, Inc., New York, N. Y., have taken over

CEGLIN*

Reg. U. S. Pat. Off.

PERMANENT CELLULOSE FINISH

Is Adding Strength and Serviceability to

• MOSQUITO NETTINGS • CAMOUFLAGE NETTINGS

Marquisette *Tricot* *Lace*

Over 50,000,000 yards of these fabrics, plain and colored, finished with Ceglin, have been delivered for military use. Ceglin (permanent cellulose finish) meets all requirements for permanence of finish, stabilization of shrinkage, resistance to slippage, etc.

Ceglin provides greater fabric strength and serviceability because it permanently reinforces each thread. It is so firmly anchored to each fiber, that is fast even to kier boiling. Ceglin has built an established reputation through its extensive use on many types of fabrics, including sheets, table damasks, shirtings, dress goods, etc.

These are important Ceglin features:

- A truly permanent finish
- Increased fabric tensile strength
- Increased abrasion resistance
- Stabilized shrinkage and stretching
- Increased resistance to slippage or distortion
- Exceptional binder for pigment colors
- Suitable for use with water repelling and mildew proofing agents

Ceglin may be applied before boil-off . . . during mercerization . . . before or after dyeing . . . before or after bleaching . . . or as a final finish. It is available in either dry or solution form.

Manufactured by

SYLVANIA INDUSTRIAL CORPORATION

General Sales Offices: 122 E. 42nd St., New York

Selling Agents: AQUA-SEC CORPORATION • 1450 Broadway, New York, N. Y.

*Product and processes patented

Why Not? *Have Your Personal Accident and Sickness Insurance with . . .*

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MASSACHUSETTS CO., INC. 1894

Insure Your Earnings . . . Protect All!

ACCIDENT POLICY PAYS		SICKNESS POLICY PAYS	
ACCIDENTAL DEATH $5,000-$10,000	WEEKLY DISABILITY $25.00-$50.00	$25.00 Per Week for Confining Sickness	$10.00 Per Week for Non-confining Sickness
Estimated Annual Cost $15		Estimated Annual Cost $20	

PAYS WHILE YOU ARE LAID UP
PAYS FROM THE FIRST DAY OF DISABILITY
48 YEARS OF UNFAILING SERVICE

No Policy Cancelled, Rates Increased, or Benefits Reduced on Account of Any Age!

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Without obligation, please send complete information and application for membership to

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T.W.-42

TEXTILE FINISHERS

Specializing in Mildew Proofing, Flame Proofing, Water Proofing of Textile Fabrics.

A 10 YEAR OLD PROVEN PROCESS — TREESDALE TREATED

TREESDALE LABORATORIES, INC.

Exec. Offices: Benedum-Trees Bldg., Pittsburgh, Pa.
Research Laboratory & Plant, Mars, Pa.

Coming...TEXTILE WORLD's

75th Anniversary Number

JUNE • 1943

mill and equipment of Phoenix Mills, Inc., Statesville, N. C., and will operate as a new branch plant in conjunction with mills at Cohoes, N. Y., and Beverly, N. J. Production will be continued under present name of Phoenix Mills, and will be given over largely to cotton and woolen underwear for army and navy service. Manufacture of sweaters is being discontinued.

Biltmore Hosiery Co., Inc., Naples, N. C.—Former mill of this company has been acquired by N. M. Rudisill, operating Rudisill Spinning Mills, Hickory and Lincolnton, N. C. Plans are under way for the establishment of a new branch yarn mill.

Elizabeth James Mills, Marion, N. C., has established new offices in a building on South Logan Street.

Holston Mfg. Co., Knoxville, Tenn., has leased a mill in Sevierville, Tenn., because many of the mill's employes come from Sevier county, about 30 miles from Knoxville, and transportation has proved difficult. Machinery was moved from Knoxville to Sevierville, including 60 knitting machines and 10 or 15 looping machines.

Metire Knitting Mills, Inc., Ridgewood, Queens, L. I., have arranged for purchase of mill at 412 Seneca Ave., heretofore occupied under lease, and will develop for permanent plant.

Monroe (N. C.) **Full-Fashioned Hosiery Co.'s** property has been purchased by Sam Schwartz and his associates, the Textile Machinery Co., of Charlotte, N. C., for approximately $35,000 from the Pilot Life Insurance Co., Greensboro, N. C. The property consists of a one-story brick mill building, 20 hosiery machines. The machines will be dismantled and the plant will be converted into a cotton mill on military goods.

Nocturne Corp., Rock Hill, S. C., newly organized, has taken over the **Jac Feinberg Hosiery Mills, Inc.,** and this company has been dissolved. The new organization, which is engaged in the manufacture of full-fashioned hosiery, is headed by Jac Feinberg and Abraham Feinberg.

Pearl Mill, Inc., Boiling Springs, N. C., newly organized, has begun operations in the former Winner Hosiery Mills, Inc., building. Men's seamless hosiery is being manufactured.

Russell Hosiery Mill, Star, N. C., is a newly established plant (as previously reported) which includes the former Star Finishing Co., Inc., and the knitting machinery of the Russell Co., at Candor, N. C. The mill is engaged in manufacture of misses' and children's anklets. Paul Russell is president.

Processing Plant News

Columbus (Ohio) **Coated Fabrics Corp.,** is making alterations and improvements in plant, for which general contract recently was awarded to Leo Ruisinger, Columbus.

Enterprise Dye Works, Inc., Woonsocket, R. I., is building a new plant on Fairmont St., 1 story, brick, 23x40 ft. Brien Building Co., Woonsocket, is doing the work.

Fabrics Novelty Processing Co., Paterson, N. J., care of Harry L. Schneider, 262 Main St., Paterson, attorney and representative, recently organized, plans early operating of local textile dyeing and finishing mill.

Pond Lily Co., New Haven, Conn., will make alterations and improvements in section of mill. General contract has been awarded to United Building Co., West Haven, Conn., and work will proceed at once.

Textile Thread Co., Watertown, Mass., has construction underway on a new cement-block dead-storage unit 26x70 ft., 1-story, to cost $4,000. Farina Brothers, Newton, have the contract.

U. S. Finishing Co., Sterling, Conn., held a public sale Nov. 28 under the direction of Samuel T. Freeman and Henry W. Cook, Providence, R. I., auctioneers. Included in the buildings to go under the hammer were 37 dwellings, a store building, 10-car garage and barn.

Miscellaneous Mill News

North Brookfield (Mass.) **Industries, Inc.,** has sold the property known as the Brown Factory to the Asbestos Textile Co., of which Thomas R. Gate is the president. The property consists of a factory, a building known as the Jencks Shop and an office building. The property has been idle since the H. H. Brown Shoe Co. moved to Worcester several years ago.

Eli Titherington & Sons plant at 6135 Lambers Street, Philadelphia, Pa., including the premises 6124 North Woodstock Street, have been acquired by the C. Walker-Jones Co., manufacturers of asbestos terry cloth, the price paid was $14,000.

Modinal* D...the All-around Detergent

FOR TOP RESULTS IN SCOURING WOOLEN GOODS SOAPING VAT-DYED COTTONS

Weapon of War for Textiles. Modinal D double strength detergent is proving its versatility and economy as mills set production records.

In Soaping Off Vats, for instance, full shade development is obtained and light fastness improved with Modinal D. Costs are reduced.

In Scouring Woolen Goods, Modinal D reduces rinsing time and temperatures. It eliminates blotchy dyeings and improves penetration. Results are uniform. Mills can accomplish real economies in time, steam, labor and water.

Take a short cut to improved results. Let one of our technical men show you where and how Modinal can speed up and improve your wartime production. The Gardinol Corporation, Wilmington, Delaware. *Sales agents:* Procter & Gamble, Cincinnati, Ohio—E. I. du Pont de Nemours & Co. (Inc.), Wilmington, Delaware.

*"MODINAL" *is the trade-mark used by the Gardinol Corp. to designate a group of its fatty alcohol sulfates.*

MODINAL D *Fatty Alcohol Sulfates*

The eyes of all America are upon the United States Treasury Roll of Honor appearing in the "Payroll Savings News." For copy write War Savings Staff, Treasury Department, Washington, D. C.

HOW TO "TOP THAT 10% BY NEW YEAR'S"

Out of the 13 labor-management conferences sponsored by the National Committee for Payroll Savings and conducted by the Treasury Department throughout the Nation has come this formula for reaching the 10% of gross payroll War Bond objective:

1. ***Decide to get 10%.***
   It has been the Treasury experience wherever management and labor have gotten together and decided the job could be done, the job was done.
2. ***Get a committee of labor and management to work out details for solicitation.***
   a. They, in turn, will appoint captain-leaders or chairmen who will be responsible for actual solicitation of no more than 10 workers.
   b. A card should be prepared for each and every worker with his name on it.
   c. An estimate should be made of the possible amount each worker can set aside so that an "over-all" of 10% is achieved. Some may not be able to set aside 10%, others can save more.
3. ***Set aside a date to start the drive.***
4. ***There should be little or no time between the announcement of the drive and the drive itself.***
   The drive should last not over 1 week.
5. The opening of the drive may be through a talk, a rally, or just a plain announcement in each department.
6. Schedule competition between departments; show progress charts daily.
7. Set as a goal the Treasury flag with a "T."

AS of today, more than 20,000 firms of all sizes have reached the "Honor Roll" goal of at least 10% of the gross payroll in War Bonds. This is a glorious testimony to the voluntary American way of facing emergencies.

But there is still more to be done. By January 1st, 1943, the Treasury hopes to raise participation from the present total of around 20,000,000 employees investing an average of 8% of earnings to over 30,000,000 investing an average of at least 10% of earnings in War Bonds.

You are urged to set your own sights accordingly and to do all in your power to start the new year on the Roll of Honor, to give War Bonds for bonuses, and to purchase up to the limit, both personally and as a company, of Series F and G Bonds. (Remember that the new limitation of purchases of F and G Bonds in any one calendar year has been increased from $50,000 to $100,000.)

TIME IS SHORT. Our country is counting on you to—

"TOP THAT 10% BY NEW YEAR'S"

EVERYBODY EVERY PAYDAY AT LEAST 10%

Save with War Savings Bonds

This space is a Contribution to America's All-Out War Effort by Textile World

Keep 'em flyin' . . . BACK

The Army needs chemicals . . . it gets them.
The Navy needs chemicals . . . it gets them.
High priority warplants need chemicals . . . they get them.
Industry needs chemicals . . . it gets them.

COMES A SHORTAGE OF STEEL CONTAINERS

The Army gets some of its requirements.
The Navy gets some of its requirements.
The warplants get some of their requirements.
Industry gets less . . .

THINGS SLOW DOWN

★ ★ ★ ★ ★

RIGHT NOW, DU PONT HAS THE CHEMICALS ...BUT CONTAINERS ARE SHORT

But when the Army empties containers quickly,
when the Navy empties containers quickly,
when the warplants empty containers quickly,
when industry empties containers quickly

AND ALL USABLE STEEL CYLINDERS, DRUMS, CONTAINERS ARE SENT BACK*

Then the Army gets more.
Then the Navy gets more.
Then the warplants get more.
Then Industry gets more.

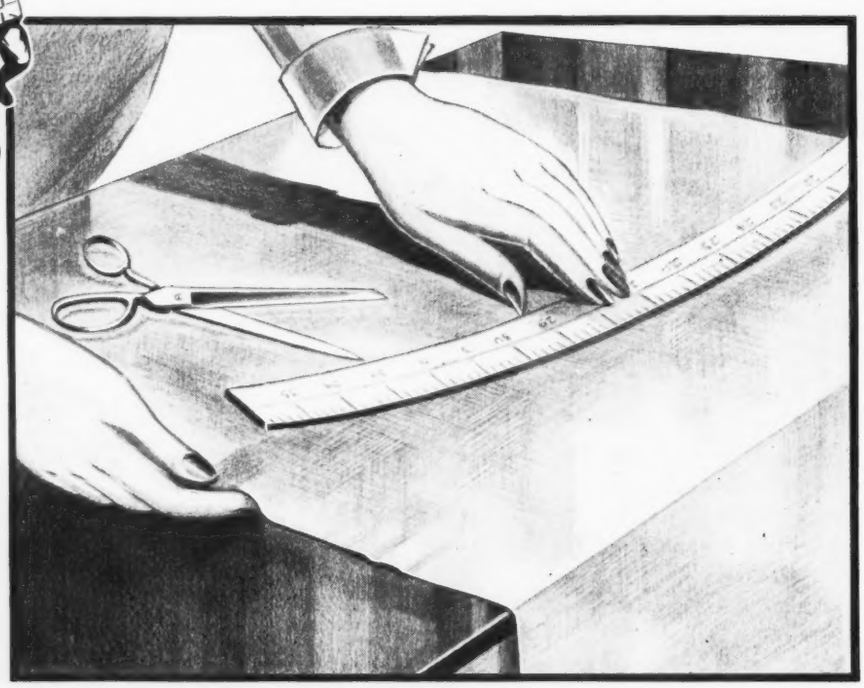
EMPTY CONTAINERS PROMPTLY, SEND THEM BACK IMMEDIATELY AND THE SERVICES, THE WARPLANTS, GENERAL INDUSTRY CARRY ON

**We need all Du Pont returnable and non-returnable metal containers in usable condition.*

DU PONT
REG. U. S. PAT. OFF.

E. I. DU PONT DE NEMOURS & CO. (INC.), WILMINGTON, DELAWARE

PARACHUTE FABRICS WILL NOT SNAG ON FORMICA SURFACES!

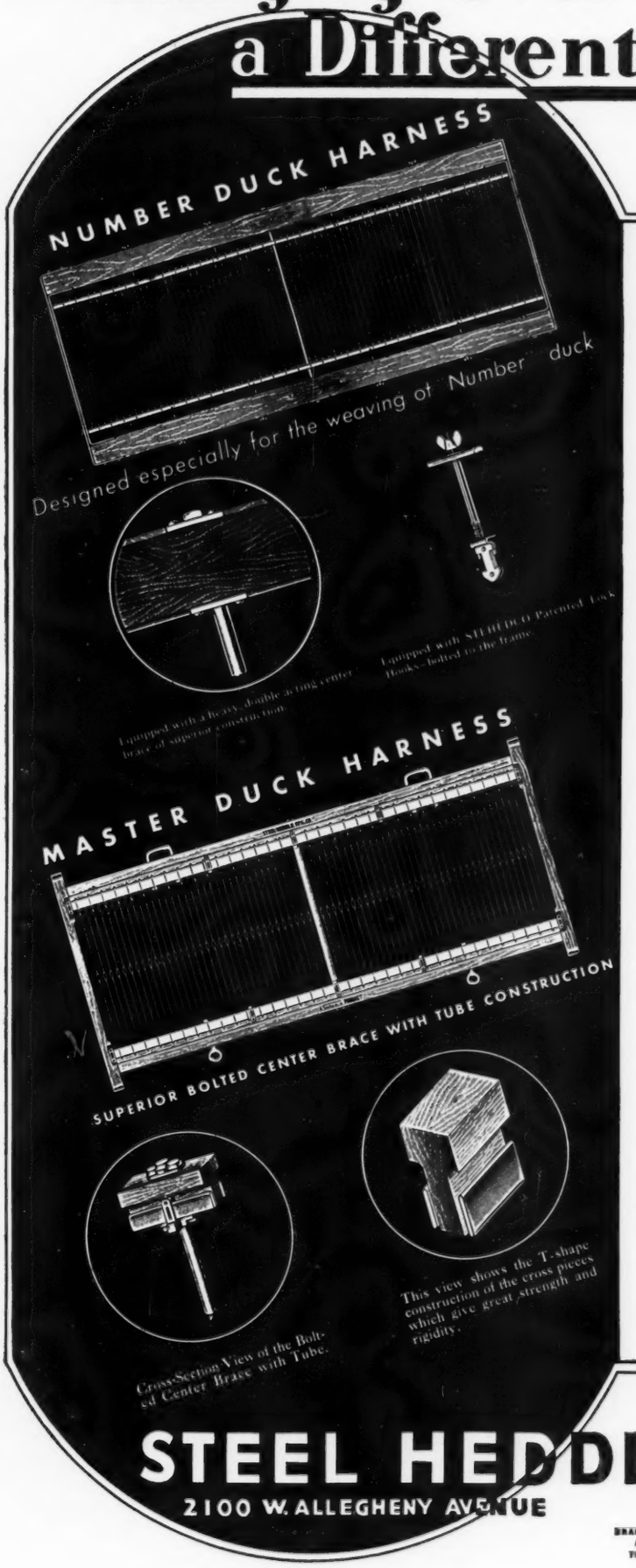


FORMICA working surfaces for inspection and work tables, never sliver or snag fine fabrics that may be handled on them. They are available in a wide range of colors to contrast with the colors of fabrics handled and make the detection of defects easier. They do not absorb moisture or stains. And the hard, smooth plastic surface will wear for many years without deteriorating in any way. It can be cleaned with soap and water or with alcohol and other solvents without injury to the finish. In short here is the perfect working surface —and one that will remain perfect through years of use. It can be used for table tops, lining for factory truck bodies, working platforms for knitting machines. Dyes can be flushed off Formica as they could be from glass for it is completely non-porous. Let us give you all the facts.

The Formica Insulation Co., 4628 Spring Grove Avenue, Cincinnati, Ohio

FORMICA

Changing Over to Weaving a Different Fabric


NUMBER DUCK HARNESS
Designed especially for the weaving of Number duck
Equipped with a heavy, double-acting center brace of superior construction
Equipped with STEELDUCO Patented Lock Hooks—bolted to the frame
MASTER DUCK HARNESS
SUPERIOR BOLTED CENTER BRACE WITH TUBE CONSTRUCTION
Cross-Section View of the Bolted Center Brace with Tube.
This view shows the T-shape construction of the cross pieces which give great strength and rigidity.

means many adjustments and headaches. Cut these to a minimum by profiting from the resources of an organization that has specialized for years in the exclusive manufacture of

QUALITY
LOOM HARNESS EQUIPMENT

As you have found out, different equipment is needed—different loom harness equipment.

Due to the weight of the fabric, everything must be proportionately heavier and stronger to withstand the added pounding, tension and strain.

Ordinary equipment will not do the work, neither will it permit the obtaining of maximum output.

Harness specifically designed and made for the weaving of this fabric *must* be used—only the best the industry provides will be found economical and satisfactory.

Our local field engineer will gladly cooperate and work with you free of any obligation.

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WRITE TODAY.

STEEL HEDDLE MFG. CO.

2100 W. ALLEGHENY AVENUE **PHILADELPHIA, PA.**

BRANCH OFFICES ALL OVER THE WORLD

Here's *Exactly* Why

The CONCAVE SIDE

Saves Belts-Saves Rubber-Saves Power!

Pick up any V-belt that has straight sides. Bend that V-belt while you grip its side-walls as in the picture above. You will feel the sides of the belt bulge out —as shown in Figure 1 on the right. Clearly, that out-bulge gives the belt a shape that does not fit its sheave groove.

Now look at Figure 2. There you see what happens when you bend a belt that is built with the patented Concave sides. You get a similar change in side-wall shape—but what a different result! The precisely engineered Concave side becomes perfectly straight. There is no out-bulge:—the full side-width of the belt *uniformly* grips the sheave groove wall. This means *uniform* wear—*longer* life—a saving in belts for you, a saving in rubber for the Nation. In addition, this full side-width grip on the pulley carries heavier loads without slippage—another saving of belts and a saving in power too!

Only belts built by Gates are built with the Concave side, a Gates patent.

What Happens When a V-Belt Bends

FIG. 1

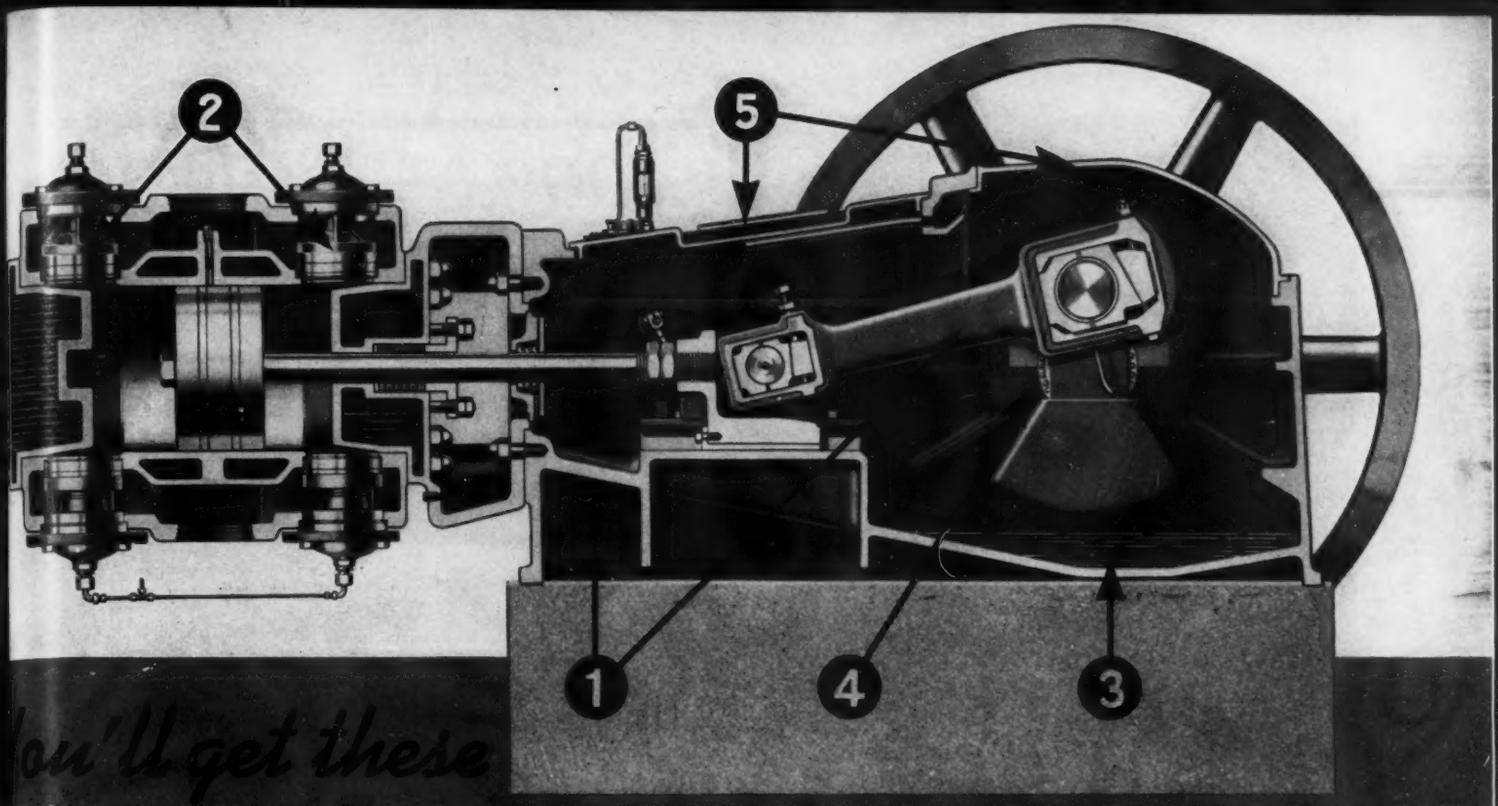
FIG. 2

THE GATES RUBBER COMPANY

Engineering Offices and Stocks in All Large Industrial Centers

GATES VULCO ROPE DRIVES

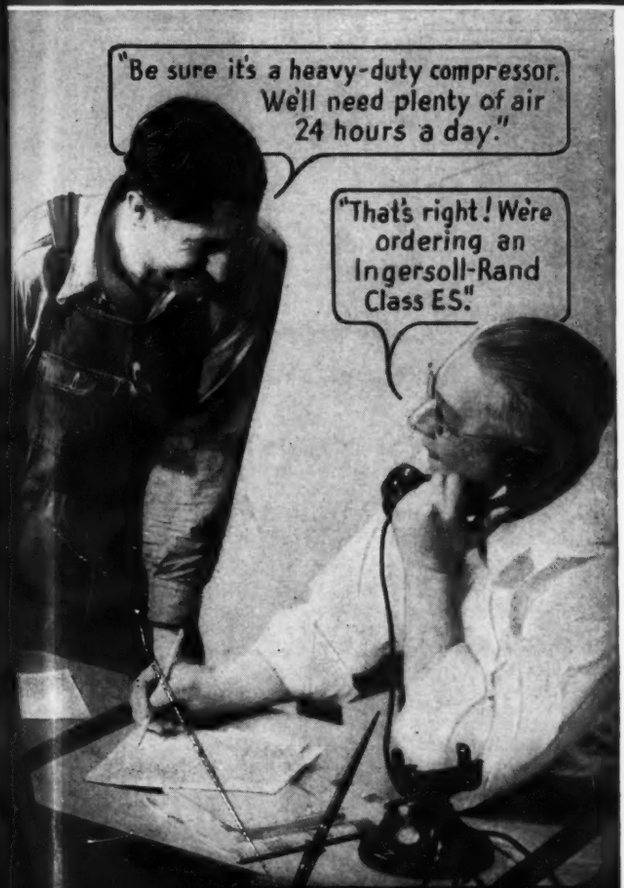
Chicago, Ill. 549 West Washington
Dallas, Tex. 2213 Griffin Street
New York City 215-219 Fourth Avenue
Birmingham, Ala. 405 Liberty National Life Bldg.
Los Angeles, Cal. 2240 East Washington Blvd.
Charlotte, N. Carolina 507 Builders' Bldg.
Greenville, S. Carolina 201 Woodside Bldg. Annex
Atlanta, Georgia 738 C. & S. Natl. Bk. Bldg.



You'll get these

HEAVY-DUTY *features*

If you install an INGERSOLL-RAND


"Be sure it's a heavy-duty compressor. We'll need plenty of air 24 hours a day."
"That's right! We're ordering an Ingersoll-Rand Class ES."

class ES compressor

1 STURDY DESIGN. The "ES" has a die-forged crankshaft and connecting rod, a double-ring piston, and a heavily-ribbed frame, all of which contribute to trouble-free operation.

2 HIGH EFFICIENCY CHANNEL VALVES. Quiet, cushioned Channel Valves are one of the reasons why the Class ES is the most efficient single-stage compressor available today.

3 AUTOMATIC LUBRICATION of running gear parts is simple and reliable. The cylinder is lubricated by a controlled force-feed system.

4 TAPERED ROLLER BEARINGS operate for long periods without adjustment. They are placed in a double row at each end of the crank, with one complete bearing assembly free floating.

5 COMPLETE ACCESSIBILITY is provided by large oil-tight frame covers. These covers are light in weight, and permit quick inspection or adjustment of all running gear parts.

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1-135

Branches or Distributors in other Principal cities the world over.

INGERSOLL-RAND ALSO BUILDS THE TOOLS THAT USE THE AIR.

Make your "ON GUARD" Equipment Last Longer

WRIGHT *Improved High-Speed* HOISTS

Too often the hoist that is on stand-by duty—*"on guard"* for instant action in case of emergency—is neglected by the maintenance man. Don't neglect your hoists. Make them last longer by regular and proper maintenance. Here are a few suggestions:

Put the Grease Gun to Work!
A **WRIGHT HOIST** needs thorough lubrication once a month. Keep the load chain well-lubricated, too.

Don't Overload Your Hoist.
While **WRIGHTS** are famous for their ability to stand abuse, this is no time to abuse machinery. Overloading results in a stretched chain which cannot seat itself properly in sheave pockets, thus accelerating wear.

Watch the Load Hook.
WRIGHT hooks, drop-forged from special steel, give visible warning of overloading by slowly opening. Don't continue to use hooks that have stretched.

Inspect Your Hoists Regularly.
Where properly maintained, **WRIGHT HOISTS** have given continuous, trouble-free service for 20 to 25 years. Just to summarize—remember—

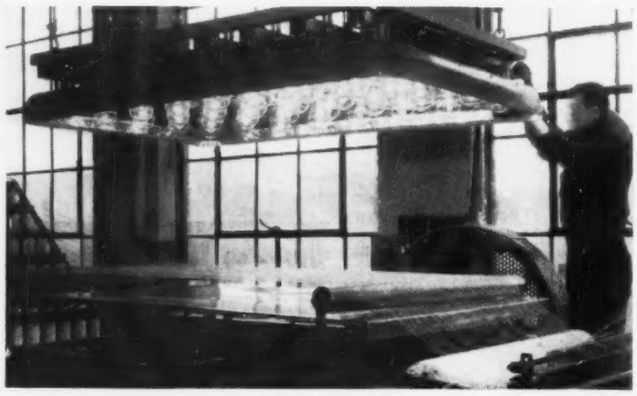
1. Don't forget the grease gun
2. Don't overload your hoists
3. Watch the load hook
4. Inspect your hoists regularly

WRIGHT MANUFACTURING DIVISION
York, Pa., Chicago, San Francisco, New York

In Business for Your Safety

AMERICAN CHAIN & CABLE COMPANY, Inc.
BRIDGEPORT • CONNECTICUT

400% REDUCTION IN DRYING TIME



INFRA-RED Fostoria PARA-SPHERE
FOR BAKING • DRYING PREHEATING • DEHYDRATION

In the thread dehydration job pictured above the rate of drying was reduced from 4 hours to 1 hour per hundred pounds of thread by utilization of the speedy Infra-red process. Adoption of this amazingly successful process by the textile industry is proceeding rapidly. Operations now include dehydrating of threads, canvas, plushes, velvets, carpet material, etc. and the surface drying of many kinds of materials. A Fostoria representative will gladly give you full facts. Write now.

SEND FOR 32-Page Manual
including installation pictures and case studies

THE FOSTORIA Pressed Steel Corp. Fostoria, Ohio

Machine and Hand Knitting *Yarns*

[French-Bradford]

for

BATHING SUITS
OUTERWEAR
HOSIERY
UNDERWEAR

★

Complete color assortments

American Woolen Company

225 Fourth Avenue New York

AVOID this Costly Valve Leakage

AREA OF LEAK	AIR		STEAM		WATER	
Diameter Inches	Number of cubic feet per month at 75 lb. pressure	Total cost of waste per month 11c per 1000 cubic feet	Pounds wasted per month at 160 lb. pressure	Total cost of waste per month 65c per 1000 lb.	Gallons wasted per month at 60 lb. pressure	Total cost of waste per month 16c per 1000 gallons
1/2"	13,468,000	$1,481.44	1,219,280	$792.53	1,524,100	$243.86
3/8"	7,558,500	831.44	684,290	444.79	855,360	136.86
1/4"	3,366,990	370.37	304,820	198.13	381,020	60.96
1/8"	824,570	90.70	74,650	48.52	93,310	14.93
1/16"	213,000	23.43	19,280	12.53	24,110	3.80
1/32"	52,910	5.82	4,790	3.11	5,990	.96

Enlarged copies of this chart printed on cardboard are available on request; also ask for Lunkenheimer Catalog 78.

Valves aren't so easy to replace these days . . . practically all materials going into their manufacture are on the critical list. This means that it is up to every valve user to take the best care of what he has to insure the longest possible service life.

Leaky valves are saboteurs of your production schedules . . . obstructing your best efforts and increasing your costs. The chart illustrated above gives you an idea of what valve leakage costs you.

Fortunately, valves respond to good treatment. Careful handling, immediate repair of the slightest leaks, and prompt replacements of worn parts will keep them on the job, ready to meet the demands imposed by industry's unprecedented war effort.

Since virtually all materials used in the manufacture of valves are on the list of critical materials, valve users are urged to furnish the highest possible preference ratings and proper "end use" symbols on their orders. This will be of mutual helpfulness.

ESTABLISHED 1862

THE LUNKENHEIMER CO.

"QUALITY"

CINCINNATI, OHIO, U. S. A.

NEW YORK CHICAGO
BOSTON PHILADELPHIA

EXPORT DEPT. 318-322 HUDSON ST., NEW YORK

LUNKENHEIMER VALVES

Apply this vitamin

to your production machines

LEWELLEN

Variable **SPEED CONTROL**

TRANSMISSIONS • MOTOR PULLEYS

● Often results are amazing when Lewellen Speed Control is applied to a production machine! Consider what the "right speed at the right time" will do for your machines. You can count on product uniformity because production speed can be adjusted to meet varying plant conditions and lack of uniformity in materials. Spoilage is reduced to a minimum. You get maximum machine output and uninterrupted service—no belts or gears to change.

Now that your production problems are so vital and because Lewellen Speed Control means so much to any fixed-speed machine, old or new—we urge you to let us help you. Why not Wire, Phone or Write, TODAY?

LEWELLEN MANUFACTURING CO.
COLUMBUS, INDIANA

Sizes from fractional to 40 h.p. Enclosed and open styles.

"HERE'S TO VICTORY!"

Throughout 1942 American production has worn the seven league boots of Industrial Progress . . . tremendous strides have been taken toward tomorrow's victory.

Dary's skilled workmen and representatives are proud to be a part of this gigantic production parade. They look forward to serving you in 1943 . . .

ON THE ROAD TO VICTORY!

★

The
DARY RING TRAVELER CO.
TAUNTON, MASS.

See a Dary representative TODAY!

JOHN E. HUMPHRIES, Box 843, Greenville, S. C.
JOHN H. O'NEILL, Box 720, Atlanta, Ga.
H. REID LOCKMAN, Box 515, Spartanburg, S. C.

PEQUOT
REG. U.S. PAT. OFF.
SHEETS
AND
PILLOW CASES

The Most Popular Sheets in America

Made Stronger—Wear Longer

Sell Faster

■

PEQUOT MILLS
Salem, Mass.

AN *Easy Way* TO GET RID OF ONE OF YOUR WORRIES...

On those looms and other machines in your mill where it's possible for ordinary set screws to work loose and cause you trouble and delays, take this easy step. Replace the plain screws with "Unbrako" Self-Lockers. Just tighten them up as usual and the knurled points dig in and hold the screws tight in spite of vibration or jarring. They're easily removed, though, with a wrench and can be used over and over. Don't wait any longer to get this easy, inexpensive protection.

Sizes from #4 to 1½" diameter.

UNBRAKO
WELT BAR SCREWS
are uniformly strong and accurate. Give complete satisfaction. Write for a free sample.

Pat'd. and Patents Pending

STANDARD PRESSED STEEL CO.
JENKINTOWN, PENNA. BOX 571

— BRANCHES —

BOSTON • DETROIT • INDIANAPOLIS • CHICAGO • ST. LOUIS • SAN FRANCISCO

Knurling of socket screws originated with "Unbrako" years ago.

AS WORKERS WITH YOU TOWARD *the* GLORIOUS GOAL OF PEACE WITH *VICTORY*

We of GLOBE extend our earnest wishes to you and yours, at home and with the armed forces of our Country, for—

A JOYOUS CHRISTMAS and a TRIUMPHANT NEW YEAR

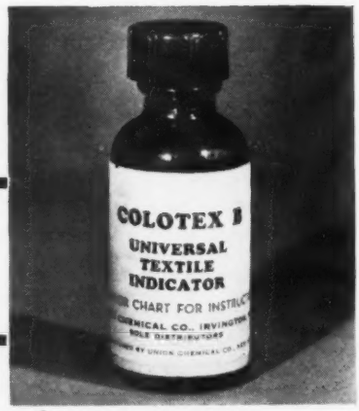
Globe DYE WORKS CO.

FRANKFORD, PHILADELPHIA, PA.

COLOTEX B

THE UNIVERSAL TEXTILE INDICATOR

FOR NATURAL AND ALL SYNTHETIC FIBRES



Just Dip It . . . Dry It . . . The COLOR is the Answer

An ALL-AMERICAN product, always in stock, readily obtainable. Simply immerse bleached fibres in Colotex B liquid, rinse and dry, and compare shade with *Color Chart* supplied with Indicator. Specific and positive color reaction in one immersion, identifying any textile fibre, including NYLON, ARALAC and VINYON, whether in the form of single or mixed fibres. COLOTEX B can be used again and again until exhausted.

• Send for 1 oz. Test Bottle
Price $2.00 Also sold in 4 oz. Bottles

McCABE CHEMICAL CO.
Manufacturing Chemists
IRVINGTON, NEW JERSEY

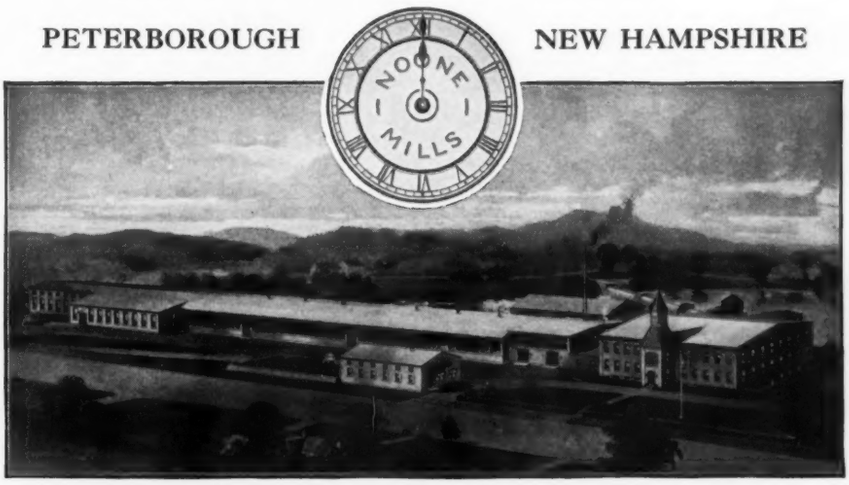
We invite your attention to our other products for the textile industry: MIRACLE WHITE PIGMENT (for discharge printing) • TEXTILE FINISHES • • SCOURING AIDS • BOIL-OFF COMPOUNDS • GOVERNMENT SPECIFICATION FINISHES T-1212, CCC-D-746, EBP—1708.

1892
The Beginning of
Booth Quality
Card Clothing
was the Beginning
of Fine American
Woolens & Worsteds
The superfine quality of U.S. woolens and worsteds is indirectly traceable to Booth Quality Card Clothing introduced 50 years ago . . . and improved constantly ever since. Have you tried Booth Woolen, Worsted, Asbestos, Tiger, Napper Wire or Reharadened Point. Its performance will convince you.
1942
Benjamin Booth Company
PHILADELPHIA, PA.

The Joseph Noone's Sons Company

A. Erland Goyette, Owner

PETERBOROUGH NEW HAMPSHIRE



Established 1831

Noone's Standard Roller Cloths

Insist on Noone's Standard Roller Cloths for your Spinning Rolls. Noone's have been Standard since 1831.

Results and costs are what count most.

Use Noone's Roller Cloth and be assured of a Strong Round uniform yarn, the best obtainable. Eventual cost, less than any other covering.

Good spinning can always be obtained when Noone's Roller Cloth is used, as it is the properly built Cloth,—has the correct cushion and consistency, and uniform gauge.

Noone's is best by test.

Many materials have been used for Spinning Roll Covering in years past, but have eventually been discarded in favor of the dependable Woolen Roller Cloth and Leather.

Do not be misled, put your faith in the good Old American Products: Noone's Roller Cloth and Leather. If in doubt, allow us to demonstrate the superiority of our Roller Cloth and a leather cot.

Use Noone's Roller Cloths, Noone's Slasher Cloths, Noone's Clearer Cloths.

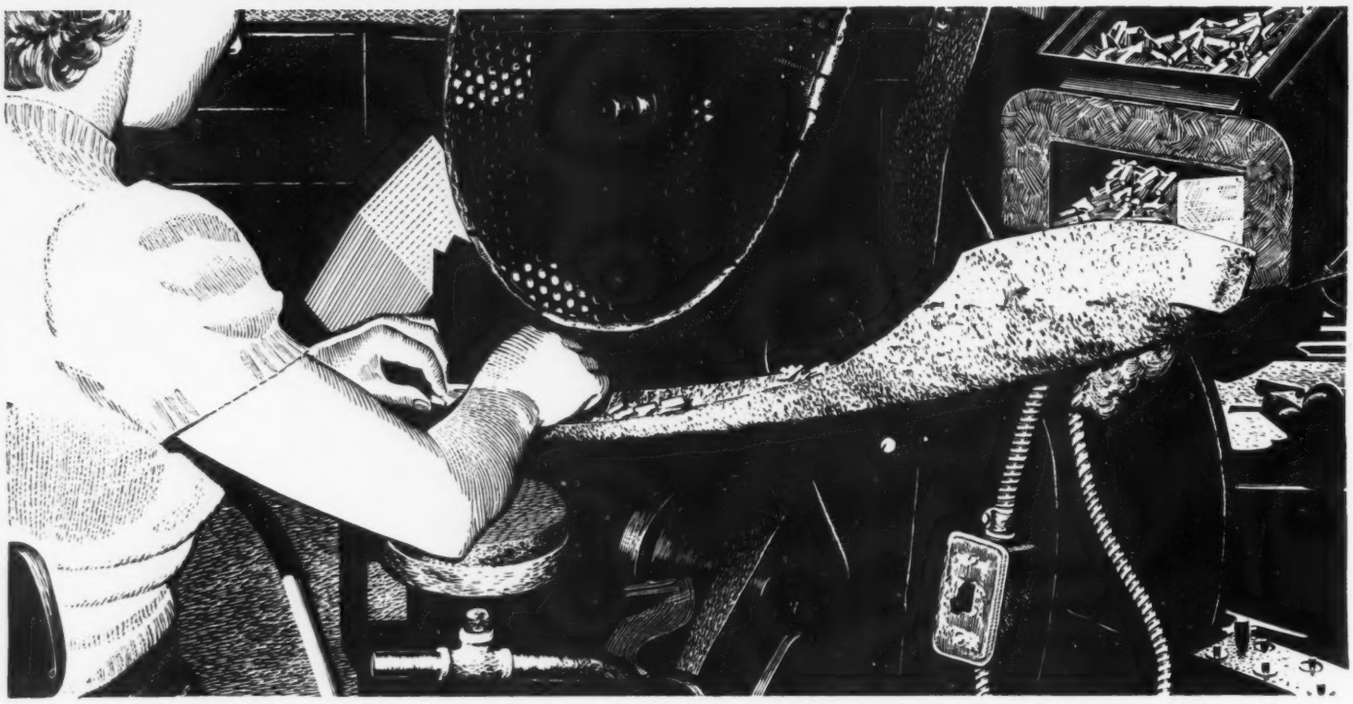
Noone's are the Pioneers in Mechanical Cloth Manufacturing in America.

WILLIAM R. NOONE & COMPANY

Selling Agents

ARNOLD T. MALONE, Manager

105 Washington Street Boston, Mass



How Sally used up a copper mine

LOOK at the picture carefully. See that elbow-rest under Sally's arm?

It is significant. In fact, it's a humble sermon on war production.

Understand the existence of that arm-rest and you understand one of the basic reasons why, in less than seven months after war-conversion, American industry is hollering for Washington to provide more copper and other basic raw materials.

► Before Sally got her arm-rest, she reached over to a box, picked up a tiny part for an airplane instrument and placed it in the machine . . . Now the supply box is tilted and constantly jiggled, so that the parts flow to her finger-tips. With each motion Sally saves a fraction of an ounce of energy and half a second of time.

Without such tiny savings of time and effort, America's 20,000,000 factory workers would be hopelessly handicapped in their race against the millions at work with a head-start of years in Germany, Japan and Italy.

► The muscle-misers and second-savers of our factories come in handy in this war, when splitting seconds in production is as important as it is in battle.

Who are the men that provide the arm-rests, jiggle the supply-boxes, conduct the ceaseless hunt for wasted half-seconds and needless human motion?

► They are the "methods" men of industry. They have all sorts of titles: plant managers, operations managers, methods engineers, efficiency engineers, etc. But their job is "to manage men and machines to save time and materials."

In peace, these men were the core of the industrial system that gave you the world's highest living standard at the world's lowest cost in hours of work.

► In war, these same "methods-managers," with the intelligent cooperation of American workmen, are cutting years from our arming task by splitting seconds from its millions of individual operations. This example of time-saving is just an indicator of what a plant operating man does. Such men have many other jobs, including the important job of plant maintenance, but "second-splitting" is the field in which they are the envy of the whole world.

The American Production Manager is the product of the American industrial system. Complex, loose-jointed and aimless though our system may seem to the theorist, it meets every challenge, because it is the best system ever devised by man for discovering, developing and rewarding individual initiative.

Reprints of this advertisement are available in handy booklet form.

McGRAW-HILL PUBLISHING COMPANY, Inc.

330 WEST 42ND STREET . . NEW YORK

SALLY—

IS UP YOUR ALLEY!

WASHINGTON, and other large city newspapers were used for the advertisement shown opposite, because government and public need to understand the asset which America has in its trained industrial staffs.

Read what we said about "methods management" in the advertisement, then ask yourself the secret of American genius for production economies in men, materials and time.

One big advantage we have in this country is the interchange of know-how between industries. If an instrument maker reduces a fourth-class hand motion to third-class, all other managers of small part assembly can, and do, find out how it was done.

By means of the articles and advertisements in FACTORY,* a plant operations magazine, tens of thousands of plant operating men keep abreast of each new development in equipment and technique.

The magazines of the McGraw-Hill Network of Industrial Communication exist solely for swapping ideas. They are backed by the editors and engineer-correspondents, who gather information wherever it is developed, and funnel it out to the fields where it is needed.

So valuable is this interchange of technical information that many companies are surveying their organizations to make sure that the supply of Industrial Magazines is adequate.

If you would like suggestions as to how to conduct such a survey, just write to Reading Counselor Department, McGraw-Hill Publishing Company, Inc., 330 West 42nd Street, New York.

* * *

THE McGRAW-HILL NETWORK

23 publications, which gather "war-news" from the "war-production-front" through a staff of 153 editors and 725 engineer-correspondents... More than 1,500,000 executives, designers, production men and distributors use the editorial and advertising pages of these magazines to exchange ideas on war-production problems.

THE McGRAW-HILL BOOKS

Publishers of technical, engineering and business books for colleges, schools, and for business and industrial use.

McGRAW-HILL PUBLISHING COMPANY, Inc.
330 WEST 42nd STREET • NEW YORK

THE McGRAW-HILL NETWORK OF INDUSTRIAL COMMUNICATION:

*Factory Management & Maintenance—*SHOWS HOW TO MANAGE MEN AND MACHINES TO SAVE TIME AND MATERIALS*

American Machinist
Aviation
Bus Transportation
Business Week
Chemical & Metallurgical Engineering
Coal Age
Construction Methods
Electrical Contracting
Electrical Merchandising
Electrical West
Electrical World
Electronics
Engineering & Mining Journal
E. & M. J. Metal and Mineral Markets
Engineering News-Record
Food Industries
Mill Supplies
Power
Product Engineering
Textile World
Transit Journal
Wholesaler's Salesman

ALSO AFFILIATED WITH BUSINESS PUBLISHERS INTERNATIONAL CORPORATION, PUBLISHERS OF BUSINESS AND TECHNICAL MAGAZINES FOR OVERSEAS CIRCULATION

Diamond Finish

Guide to Ring Quality

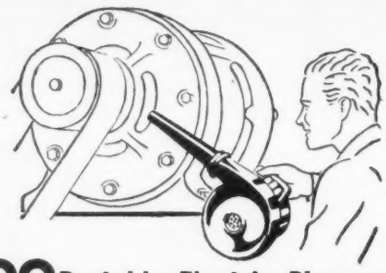
Never before has Ring Quality been of such importance. Today MAXIMUM production of textiles is a vital war need, and only with first class ring equipment can overseers push their spinning and twisting machinery to full capacity. Today DIAMOND FINISH rings are the finest in their 70-year history. In finish, hardness and advanced design, they represent the very peak of quality — permitting peak production!

WHITINSVILLE (MASS.) SPINNING RING CO.

DIAMOND FINISH

Makers of Spinning and Twister Rings since 1873

Blow Out Dust — Keep Motors and Machinery Clean with



TORNADO Portable Electric Blowers

PREVENT motor burnouts, overheating and shutdowns. Keep motors and machinery clean. Blow out dust, dirt, lint, chips, etc. with the powerful, portable TORNADO Electric Blower. Quickly pays for itself in cutting repair and replacement costs.

Write for details and FREE Trial Offer

Request details on Low-Priced Air-Raid Sirens

BREUER ELECTRIC MFG. CO. 5086 Ravenswood Ave. CHICAGO, ILLINOIS

THOS. WOLSTENHOLME SONS & CO. INC.

3300 Frankford Avenue

Philadelphia, Pa.

Yarns for all purposes

French and English Spun Worsted

French Spun Zephyr

French Spun Merino

Representatives:—

BOSTON—Perkins & Boland, Inc., 99 Chauncy St.
LOS ANGELES—Arthur Bone, 4436 Worth St.
CHICAGO—C. F. Peffer, 222 W. Adams St.

COTTON WARPS

Cotton Yarn and Warps . . Single or Ply . . White or Colored . . Carded . . Combed

Novelty yarns—of cotton, worsted, wool, mohair, rayon — in all fashionable combinations and effects and in many original effects. Write for samples.

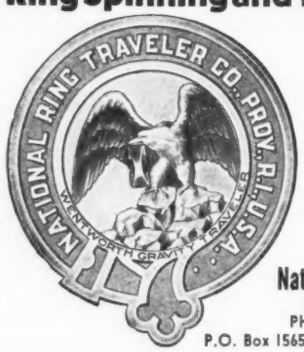
Sell Direct

Dana Warp Mills . . Westbrook, Maine

THE OLDEST AND LARGEST

MANUFACTURER OF

Ring Spinning and Twister Travelers



In the UNITED STATES

American • Hicks • Wilson

United States Standard Wentworth Double Duty and Gravity Travelers

MAKE STRONGER YARN

National-Etartnep Finish
A New Chemical Treatment

Write Us

National Ring Traveler Company

354 Pine St., Pawtucket, R. I.
PHILIP C. WENTWORTH, *Treas.*
P.O. Box 1565, Providence, R. I. Charlotte, N. C.

MURDOCK Bobbin Holders

Two exclusive Features Affording Long Life:

1. **Automatic-bobbin holders equipped with holding wings electrically hardened all the way through.**

2. **Holding wings held positively in position by skeleton washer—no sliding around.**

We make holders for ¾" to 2½" bobbin heads, including large-package wood and paper bobbins, also special bobbins. Duplex holders take both automatic and non-automatic bobbins. Holders for all types of mules, frames, twisters, and winders.

MURDOCK & GEB CO., Franklin, Mass.

Manufacturers of Bobbin Holders for Over Fifty Years

MOHAIR WORSTED
AND
WOOLEN YARNS

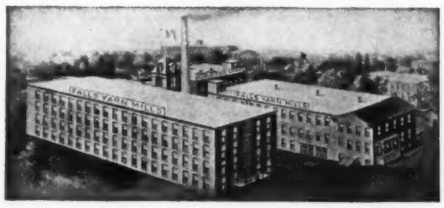
COLLINS & AIKMAN CORPORATION

PERCY A. LEGGE *Sales Agent*

New York • Philadelphia • Boston

FALLS YARN MILLS
WOONSOCKET, R. I.

Incorporated 1904



Fine Woolen and Specialty Yarns For Weaving and Knitting

SELL DIRECT

NEW YORK	PHILADELPHIA	CHICAGO
Stanley Porter	Harold R. Shirley	C. M. Patterson
257—4th Ave.	Commercial Trust Bldg.	222 West Adams St.

RAYON TOPS

Standard Grades—Lustrous—Delustred—Superfine

Rayon Noils . . Staple Fibre

ANDREW K. HENRY

158 Summer St. Boston, Mass.

OSCAR HEINEMAN CORPORATION

•

PROCESSING

Rayon and Nylon Yarns

for Hosiery Knitting Trade

We specialize on high twist rayon processed with "AVCONIT No. 1" for full fashioned hosiery.

2701 Armitage Avenue Chicago, Illinois

Aberfoyle Mfg. Co., 123 So. Broad St., Philadelphia, Pa.
N. P. Murphy, 813 Guilford Bldg., Greensboro, N. C.
C. D. Gott Co., 3303 Brainerd Rd., Chattanooga, Tenn.

. . . the new basic selling appeal for cotton featured every month in the national campaign of 12,000,000 cotton farmers and the American cotton industry.

JANUARY Page ad in January issue of *Good Housekeeping* will feature this basic selling theme for you in **WHITE GOODS.**

NATIONAL COTTON COUNCIL of AMERICA
COTTON-TEXTILE INSTITUTE

12-1

STOP OIL STAINS —RAISE PRODUCTION

NON-FLUID OIL averts production losses by preventing oil stained "seconds"—assuring higher output of perfect goods.

Today or yesterday—7 out of 10 mills have used NON-FLUID OIL regularly because it stays in bearings and off goods, outlasting oil many times over.

Write for instructive bulletin

New York & New Jersey Lubricant Co.

Main Office: 292 Madison Ave., New York, N. Y.

Southern Agent, Falls L. Thomason, Charlotte, N. C.

WAREHOUSES

Chicago, Ill.		Atlanta, Ga.
Providence, R. I.	Detroit, Mich.	Charlotte, N. C.
St. Louis, Mo.		Greenville, S. C.

TRADE MARK REGISTERED
NON-FLUID OIL
IN U.S. PAT OFFICE & FOREIGN COUNTRIES

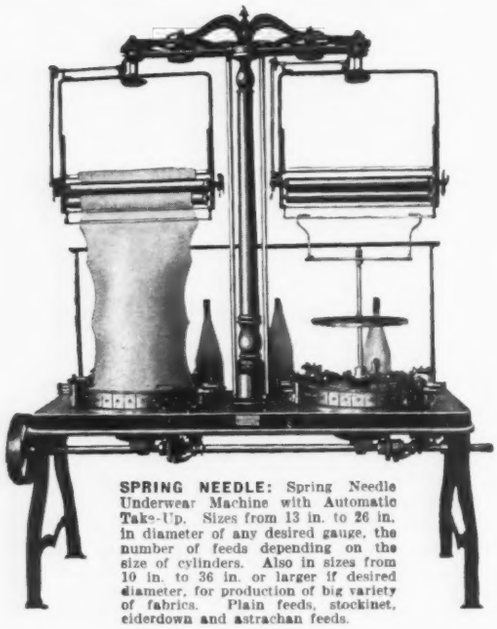
MODERN TEXTILE LUBRICANT

Better Lubrication at Less Cost per Month

CRANE

KNITTING MACHINES

meet the need for Speed—
for Quality and Low Cost



SPRING NEEDLE: Spring Needle Underwear Machine with Automatic Take-Up. Sizes from 13 in. to 26 in. in diameter of any desired gauge, the number of feeds depending on the size of cylinders. Also in sizes from 10 in. to 36 in. or larger if desired diameter, for production of big variety of fabrics. Plain feeds, stockinet, elderdown and astrachan feeds.

CRANE Knitting Machines meet the demands of rapidly changing patterns and styles. Their middle name is *versatility* . . . plus smooth, fast running operation that eliminates expensive stops. Among their exclusive features are Patented hardened Wing Burr Wheels and patented Thread Stop Motion. There's many a Knitting Mill in which batteries of Cranes are the mainstay of production.

Let us tell you why —and how . . . just ***WRITE***

CRANE Improved Automatic
3 Colored

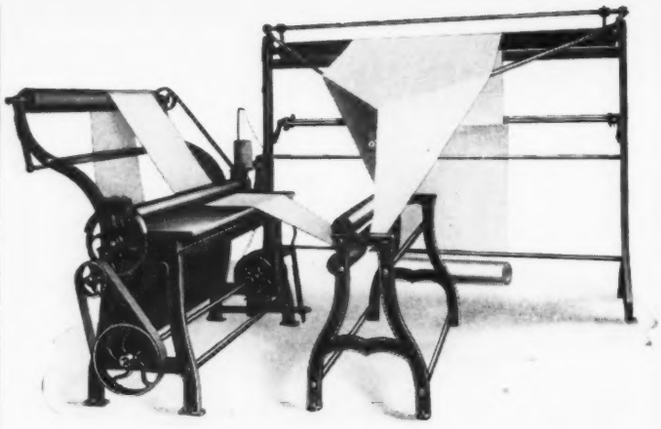
Improved Automatic 3 Colored Plain Stripes. Made in sizes from 7⅝ in. to 20⅝ in. inclusive, of any desired gauge. Measurements are back to back of cylinder needles. Knit fabrics for bathing suits, theatricals, athletic goods. Crawford stop motion applied when requested.

1870 **CRANE** 1942

MANUFACTURING CO.
LAKEPORT, N. H.

Spring Latch Needle

KNITTING MACHINERY



No. 27—IMPROVED DOUBLING AND TACKING MACHINE

Sewing any length stitch up to 1¼ in., making a firm, strong stitch for any weight or width of goods. This machine is equipped with our latest oscillating needle bar sewing head, which makes it the fastest tacking machine on the market for tacking the selvages of woolen and worsted fabrics. For further information, send for our catalog.

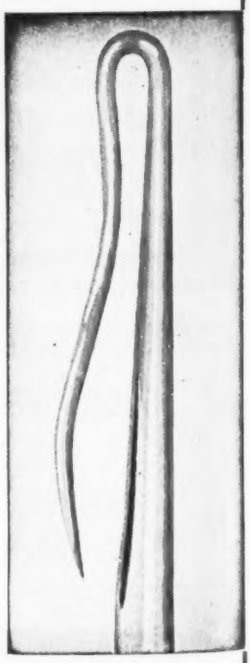
DINSMORE MFG. CO.

SALEM, MASS.

CHARLES COOPER CO., INC.
Bennington, Vermont

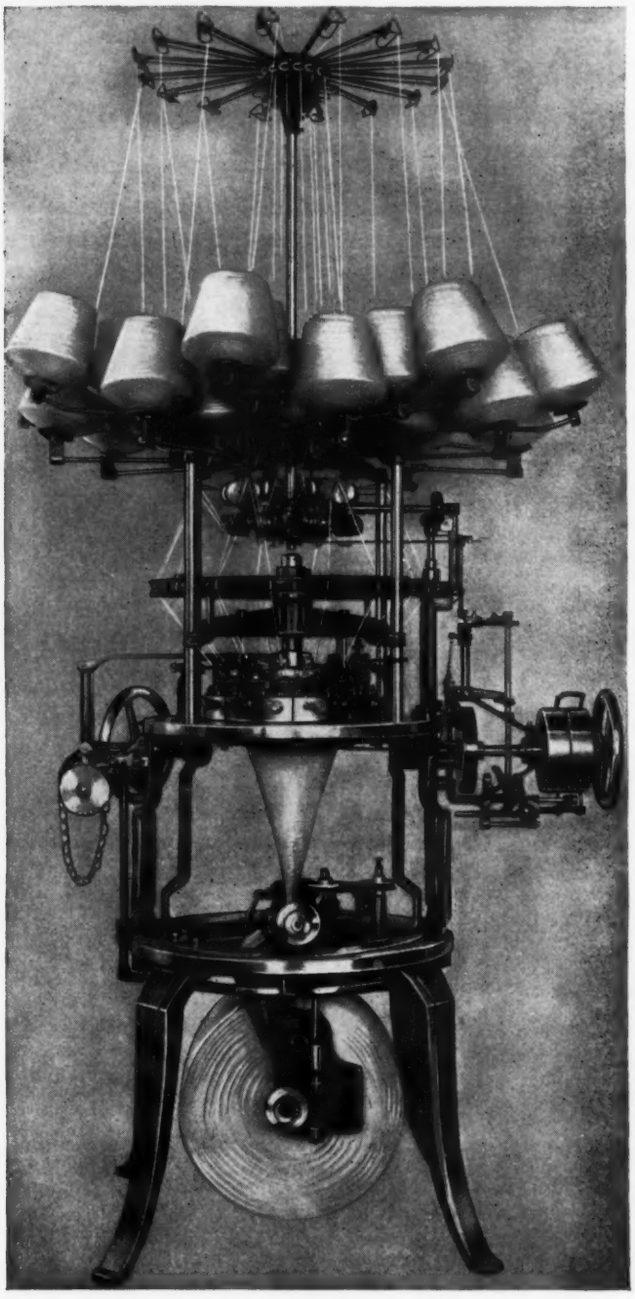
Manufacturers of
Quality LATCH and SPRING-BEARD

NEEDLES



also
Manufacturers of **THE FAMOUS COOPER CIRCULAR SPRING-NEEDLE RIB KNITTING MACHINES**

WILDMAN MULTIPLE FEED RIB MACHINE



A SIMPLE PROBLEM IN ECONOMICS . . .

Which for you?

An 8-feed machine occupies this much ☐ floor space and delivers ■ this much product.

A Wildman 16-feed machine occupies ☐ exactly the same floor space and delivers ■■, double the product—using only a third more power.

The answer is obvious—particularly when other advantages are considered, such as trouble-free operation, a greatly-improved and more uniform product, and many others that will interest you. Write for complete details.

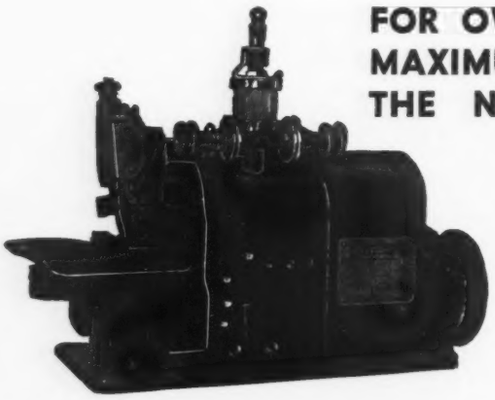
For **AMERICA**

"Throw YOUR SCRAP into the Fight"

AMERICAN INDUSTRIES SALVAGE PROGRAM

WILDMAN MFG. CO., Norristown, Pa.

Established 1838 **MERROW** **Incorporated 1894**



FOR OVERSEAMING AND OVEREDGING WITH MAXIMUM EFFICIENCY — MODERNIZE WITH THE NEW MERROW CLASS A MACHINES

The result of several generations of specialized effort in the industrial sewing machine field—combining quality production with high speed and low operating cost to a greater degree than ever before.

WRITE FOR DETAILS AND LET US DEMONSTRATE THESE MACHINES ON YOUR OWN FABRICS.

ALSO PLAIN CROCHET AND SHELL STITCH MODELS FOR ORNAMENTAL EDGE FINISHING AND CLASS 60 MACHINES FOR BUTT SEAMING

200 VARIETIES FOR 200 PURPOSES

THE MERROW MACHINE COMPANY

Starting Its Second Century

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For better whites and level results, use a pound of STANDARD Grade 40 Silicate with each 3 to 5 lbs. of caustic in your kier boiling formula. Troublesome stains are eliminated and scarce chlorine is saved.

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Manufacturers of

BRAIDING MACHINERY

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ONE HUNDRED YEARS YOUNG

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For Circular, Full Fashioned, Tricot and Milanese Knitting Frames, also Narrowing, Stand, Transfer Points and Welt Hooks for Full Fashioned Machines; Slides, Sinkers, Jacks, Guides or Flat Eyes, Sley and Milanese Points, Transfer Points or Quills, etc.

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SINCE 1846 **SYRACUSE, N. Y.**

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LIKE THE TIDES, ARE EVER CHANGING

• • • Styles are fickle, dictated by both the whims and fancies of the fairer sex, and the exigencies of an emergency or a crisis,—yet, throughout the ages styles have been primarily influenced by eye-appeal, plus a definite consideration for utility and wearability—And in this ebb and flow of "style-tide," Scholler Processing Products have, for over 35 years, always imparted those essential factors which give to any fiber or fabric: Alluring beauty, Softness, Snag and Run resistance, plus Long Service Life.

There's a Scholler Processing Compound to meet any of your requirements.

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The OUTSTANDING Conditioner for Textile Fibres

- Helps separate long fibres from short
- Prevents waste by saving *good fibres*
- Makes fibres more supple, pliable
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- Protects cards and preserves the wire
- Safeguards health, insures better working conditions by preventing Dust and Fly

SERVING THE TEXTILE INDUSTRY FOR 68 YEARS.
ORIGINATORS OF THE BRETON MINEROL PROCESS FOR CONDITIONING FIBRE.

BORNE SCRYMSER COMPANY
ELIZABETH • NEW JERSEY

JOIN US WE HAVE TOPPED 10% WAR SAVINGS BONDS EVERY PAY DAY

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THE STANDARD DE-SIZING AGENT

for cottons, rayons and mixed goods

For your de-sizing problems — our technical men are at your service . . . Write or 'phone.

WALLERSTEIN COMPANY, INC.
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1. Used in place of soap for fulling, it eliminates the lengthy soap boiling operation.
2. Used with soap, it prevents congealing, eliminating stuck places, creases and whiplashes.
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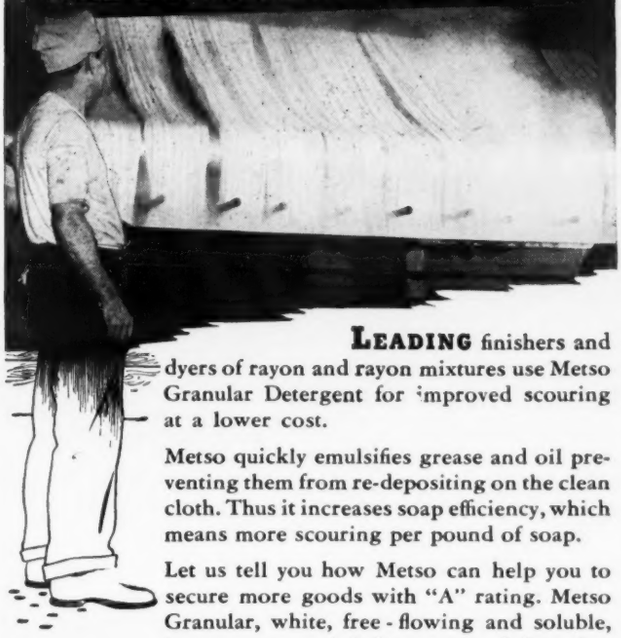

LEADING finishers and dyers of rayon and rayon mixtures use Metso Granular Detergent for improved scouring at a lower cost.

Metso quickly emulsifies grease and oil preventing them from re-depositing on the clean cloth. Thus it increases soap efficiency, which means more scouring per pound of soap.

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NEW YORK, N. Y. - - - - CEDAR RAPIDS, IOWA

SOUTHERN OFFICES: ATLANTA, GA. - - - - SPARTANBURG, S. C.

John:
Penick and Ford's Starches and Gums for sizing Corduroy warps insure dependable weaving and maximum cutting efficiency. Let's try the type they recommend. Jim

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Two new cationic type softeners

TEXAMINE

a pure white permanent softener economical to use due to its complete exhaustion qualities

TEXAMINE K

a permanent softener and desizing agent for processing grey goods in the kier eliminating the customary grey desizing.

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A FULL LINE OF DYESTUFFS
CONVERTED STARCHES
WATERPROOFING AGENTS
SULPHONATED OILS
FINISHING COMPOUNDS
PENETRATORS
DETERGENTS AND OTHER
CHEMICAL SPECIALTIES
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(Classified Advertising)

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Positions Wanted (full or part time individual salaried employment only) ½ the above rates payable in advance.
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with successful record as manager and producer, preferably one with good foundation in raw stocks.

Our mill is running mostly on Government work. It is modernly equipped and conveniently located in the East. Salary $7500 per year.

Give full details with references in application.

P-204, Textile World
330 West 42nd St., New York City

WANTED

LOOM FIXER AND WEAVER

On Woven Label work, man who can set up patterns, and direct the winding warping and quilling of materials as well. Write, giving past experience, age and draft status.

P-207, Textile World
330 West 42nd St., New York City

POSITIONS VACANT

(See also "Selling Opportunity" Offered)

WANTED: Experienced machine fixers on Course Gauge H. H. Machine. P-211, Textile World, 330 W. 42nd St., New York, N. Y.

EXPERIENCED OVERSEER in Weave Room on Draper Looms—woven paper fabrics. Also positions for loom fixers. Give draft status and full details of your previous experience in answer to Visinet Mill, 2400 So. Second St., St. Louis, Missouri.

POSITIONS WANTED

MANAGER-SUPERINTENDENT: of Rayon Cotton or silk — better qualities of Dress fabrics, fancy stripes and Jacquard, Tapestry, Drapery, and furniture. Technician good mechanic. Best of references. PW-187, Textile World, 330 W. 42nd St., New York, N. Y.

TEXTILE SCHOOL GRADUATE 40 years old, 12 years in slashing on viscose and acetate rayon and preparatory departments, good knowledge of chemistry looks for position in same. PW-203, Textile World, 330 W. 42nd St., New York, N. Y.

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47 years old—American; with one of nation's largest manufacturing companies in the East, wishes Western connection in smaller or medium, well-rated organization, which needs capable assistance in management. Progress record ranges from factory training, employment, purchasing, sales direction. Familiar with transitional problems. Outline available. Highest personal references.

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Over Forty Years of Dependable and Confidential **EMPLOYMENT SERVICE**
for textile mills, converters and selling houses requiring managers, superintendents, stylers, designers, salesmen, overseers, second hands, fixers, etc. 'Phone, wire or write us your personnel requirements.

CHARLES P. RAYMOND SERVICE, Inc.
Phone: Liberty 6547 **294 Washington Street, Boston, Mass.**

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A COMPLETE WORSTED (FRENCH SYSTEM) SPINNING MILL INCLUDING SCOURING MACHINES WITH A PRODUCTION OF 7000 LBS. OF YARNS FROM 26s (30s by Metric System) TO 53s (60s by Metric System) COUNTS IN 8 HOURS.

W-206 Textile World, 330 W. 42nd St., New York City

POSITIONS WANTED

NARROW FABRIC EXECUTIVE: Experienced practical designer on narrow fabrics and elastics; all constructions; can meet government specifications. Textile graduate, over draft age, now employed wishes responsible position. A high grade successful man for a reasonable salary. PW-208, Textile World, 330 W. 42nd St., New York, N. Y.

EXPERT FIXER on Wildman spring needles machine experience on cotton and rayon. Have designing ability also experience on Rib machines, Wildman and Scott & William and excellent reference. PW-213, Textile World, 330 W. 42nd St., New York, N. Y.

SALESMEN WANTED

NATIONALLY PROMINENT COMPANY has opening for salesman with following among southern cotton mills and finishers. Must have technical education and mill experience in textiles and a good sales background. Resident of the South preferred. In reply, give complete information covering experience, education, and salary desired. SW-209, Textile World, 520 N. Michigan Ave., Chicago, Ill.

PART TIME or full time salesman wanted, in new line of fungicidals-germicidals, the answer to spot resistance trouble in dyeing—High rate commission. Also used in connection with paints, osnaburg, mildew retardant, wool, cotton. Repeeat order volume business. Give complete details by mail in confidence. The Rampel Chemical Co., 247 Park Avenue, New York, N. Y.

AGENT AVAILABLE

OPPORTUNITY WANTED. Mills agents, well established, cotton fabrics and yarns, with following among jobbers, converters and manufacturers. Willing to devote all time to production of mill with fair volume. AA-210, Textile World, 330 W. 42nd St., New York, N. Y.

WANTED

WANTED—Drawing Bobbins—11,200 4½ x 2, 5,000 8 x 4 (with drivers) 3,500 11 x 4½, 1,800 12 x 5, 500 14 x 6, 300 11 x 6". Also 6,000 for B.W. Whitin frame. Send prices and samples to: Demetre, Box 160, St. Jean, P.Q., Canada.

MACHINES WANTED—card winding ball-winding Universal #50. State details. W-214, Textile World, 330 W. 42nd St., New York, N. Y.

FOR SALE

SACRIFICE: TROY TUMBLER, 42x60, 2 pockets. Motorized with reverse control box. Levitt, 1321—61 St., Brooklyn, N. Y.

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LARGE Sums—LOW annual rates.
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FOR SALE

Additional For Sale Ads Continued on Pages 178-181

FOR SALE
BOBBINS

50,000 8" 3-ring Automatic Bobbins in good condition. Price and samples on request.

FS-200, Textile World
330 West 42nd St., New York City

ADDITIONAL EQUIPMENT WANTED ADVERTISING ON PAGE 180

NYE & TREDDICK KNITTING MACHINES

2—12" 12 cut 12 feed
3—13" 10 cut 8 feed
6—14" 10 cut 8 feed
4—15" 10 cut 8 feed
2—16" 10 cut 8 feed
1—17" 10 cut 12 feed
1—19" 10 cut 12 feed
2—20" 10 cut 12 feed
1—21" 10 cut 12 feed
2—17" cuffing machines 8 feed, with tuck and welt attachment
1—19" Cuffing machine 8 cut with tuck and welt attachment

Complete and in good working condition. We offer the above as a lot at the very low price of $250.00 each. Immediate delivery.

Also 1 Davis & Furber Napping Machine in good working condition. Price very reasonable.

PERFECTION MILLS, INC.
WELDON, N. C.

L. J.
McCAFFREY
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THE FOLLOWING IS A PARTIAL LIST OF ITEMS WE HAVE FOR SALE:

AUTOMATIC LOOM BOBBINS
CANVAS BASKETS
COTTON HARNESS
C & K LOOM PARTS
DRAPER LOOM PARTS
LOOM BEAMS
PICK GEARS
ROVING CANS
SECTION BEAMS
SPINNING RINGS
STEEL HEDDLES
STEEL & PITCH REEDS
WORSTED SPOOLS & BOBBINS
WORSTED CAPS, TUBES & SPINDLES

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BOX 495 PAWTUCKET, R. I.

FOR SALE—Hosiery Mill Machinery

We specialize in Scott & Williams, Reading, Banner, Wildman, Smith-Drum, Paramount and other types of hosiery mill equipment for seamless and full fashioned mills. Special attention to export trade.

MORRIS SPEIZMAN
508-14 W. Fifth St. Charlotte, N. C.

FOR IMMEDIATE SALE

EXTRACTORS

Two Tolhurst Extractors, 60" basket, steam engine driven with 6" belt equipped with Bryson Safety Gauge over the basket. #3142 and #4282, 500 R.P.M. Both Extractors in perfect condition and located near Philadelphia.

FS-212, Textile World
330 West 42nd St., New York City

LIQUIDATING
EXCELLENT TEXTILE EQUIPMENT
COTTON—RAYON—WOOL

SPECIAL OFFERING—
40—Draper Automatic Bobbin changing Dobby Looms Modified "D", 20 Harness Single Index Dobby, 69½" Reed Space, Midget Feelers, 4 Bank Sliding Bar Stop Motion, Stafford Thread Cutters, Friction Let-Off, Worm Take-Up, Single Filling Fork, Motor Driven by ½ H. P. G. E. 550 Volt Motor.

7—Hercules & Tolhurst Extractors 30"-60" Copper, Rubber Baskets, M. D. & B. D.
6—W. & J. and V. V. Tenter Frames, 30' to 90' Stainless and Brass Clips.
1—72" Full Width Washer, 2 Sets Rubber Nip Rolls.
1—80" Full Width Washer, 3 Roll Mangle Ball Bearing, Rubber Rolls.
3—Woonsocket and D. & F. 24-36 Roll Nappers.
1—V. V. 19' Dye Kettle.
4—30" to 48" Stainless Dye Kettles.
6—Can Dryers, Copper and Steel, 45" to 107" Face.
1—Baker Electric Lift Truck.
Lot of Cast Iron Pipe, Valves, Reducers, Tees, Elbows.
2—Butterworth Dye Jiggs, 72".
1—King & Gerber 65" 3 Roll Finishing Calender.
1—V. V. 60" 3 Roll Finishing Calender.
1—3 Roll Mangle Heavy Duty, 76" Face, Rubber Rolls.
3—P. & S. and National Continuous Loop Dryers.
6—Copper Jacketed Mixing Kettles, 50 to 200 gallons.
10—Examining, Inspecting, Winders, 40" to 68".
5—Print Machines, 1 to 10 Colors.
1—Continuous Boil Off Unit.
1—3 Bowl Calender.
2—6 Bowl Jumbo Calenders.
2—Textile Hydraulic Schreiner Calenders.
1—Truck Dryer.
10—Mangles, Padders, Quetches, 40 to 80" Rubber Brass Rolls.

Misc. Shears, Decators, Brushes, Soap Kettles, Rubber Lined Storage Tanks, Tubers, Folders, Doublers, Palmers, Embosses, Pumps, Motors, Sewing Machines.

REPUBLIC TEXTILE EQUIPMENT COMPANY
40 Worth St. Phone WOrth 2-4583 New York City, N. Y.

FOR SALE

2—Whitin Quillers, 378 Spindles each.
2—Foster make, Tube winders, 40 spindles each machine, wind from skeins to 6" tubes.
7—Ball Winders, Franklin Machine Co. makes. With 8" gauge or space between spindles. 12 spindles to ea. machine.
11—Ball winders, Silver & Gay make. 5" gauge. 20 spindles each machine.
7—Rubber Thread Covering machines, wrap yarns around rubber threads. 40 spindles each machine.
2—Atwood make, spool or Thread winders, for sewing threads, Semi-Automatic machines, 12 & 8 sp. each.
900—Braiding machines, for making Military Cords, Trimmings, Braids of every conceivable type.
80—Universal #50 Cone and Tube Winders.
40—Knitting Looms, for making War materials of various types, such as Nets, Mesh cloths, Belt materials, etc.

All machines, located on our premises, here.

ROBERT SOLOMON & CO., INC.
162 Greene Street New York City

FOR SALE

- Printing Machines
- Dry Cans
- Calenders
- Quetches
- Extractors
- Tendering Frames
- Beamers & Tubers
- Doubling & Folding

Looms—Warpers—Winders—#90 & #50 Universals
Ribbon Machinery & Equipment

A. & M. BLANK CO., INC.
49 STATE STREET PATERSON, N. J.
Sherwood 2-1367 Lambert 3-9523-0275

FOR SALE

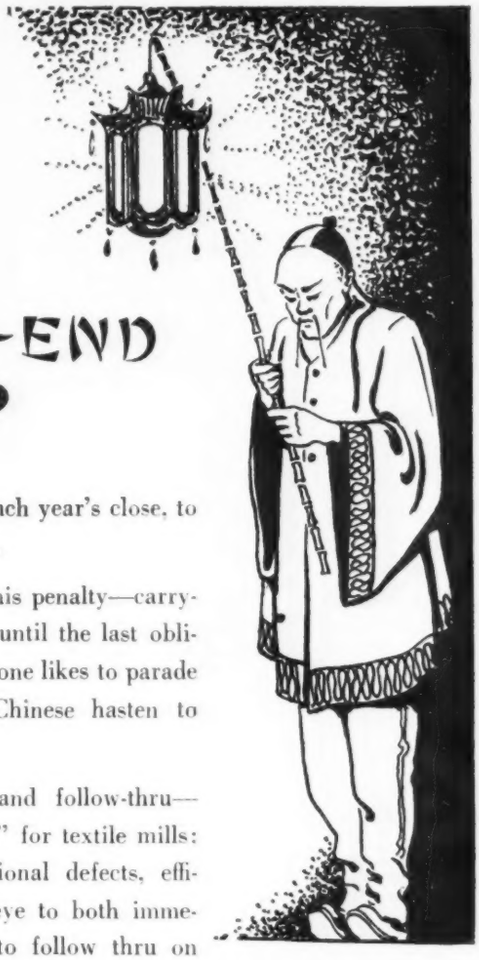
1—D & F Fearnaught Mixing Picker, table feed, all iron construction.
2—D & F Dressing Reels, 108" wide, brass plates, spool racks, 2 single beamers.
1—Tomlinson Waste Machine, belt drive.
2—Sargent Yarn Conditioners, motor drive.
1—Sturtevant #60 Blower
Copper Slasher Cylinders, 48"–60"–72" dia.

BOBBINS—SPOOLS—SUPPLIES *Sole agent for Smith Yarn Twist Tester*

BTS
BAY STATE TEXTILE CO.
220 HARTWELL STREET • FALL RIVER, MASS.

AVAILABLE for IMMEDIATE Shipment

3—46" to 52" Van Vlaanderen Button Breakers
1—42" K & G 3-roll Calender with motor
1—48" Farmer 6-bowl Calender
1—50" Van Vlaanderen 3-roll Calender
2—sets 3-cyl. Furbush Woolen Cards 48"x60" camel back feeds, Barker condensers
8—Whitin D-2 Combers. 3—Whitin C Combers
1—72" Gessner 2-cyl. Semi-Decating Mtr. Dr.
9—36" to 48" Windle Doublers
1—60" V V Doubling, Tubing & Measuring Mche.
1—set 23 Lincoln 88" Copper Dry Cans, Horiz. Fr.
1—60 yd. P.&S. 100" Return Tenter dryer
1—150 yd. Kenyon Return Tenter Dryer 65"
2—84" Proctor & Schwartz Loop Dryer
1—Hurricane Loop Dryer, 7'8" wide x 34'2½" long x 6'3½" high, inside dimensions
3—Smith Drum Paddle Dyeing Machines with motors, 1-25 lb., 1-50 lb., 1-100 lb.
1—56 Arm Mayoux Skein Dyeing Machine driven with monel and copper tanks
1—36" Empire Copper Basket Extractor, belt dr.
2—48" Tolhurst Copper Basket Extractors, belt dr.
10—40" to 46" Elliott & Hall Folders
1—Schultz Fulling Mill
1—60" wide, 3-cyl. 30" dia. Garnett, automatic
2—54" and 64" Inspecting & Winding Machines
35—S&W Mod. K Knitters, 48 gge. 3" to 3½" 160 to 220 N. with attachments
30—42" Draper Mod. K Auto. Looms, 20 hp. mtr. dr.
100—42" and 48" C & K 4 x 1 Automatic Looms
30—69" Draper Mod. D Auto. Duck Looms, mtr.
12—72" C & K (4x4) Tapestry Looms with 1300 Jacq. mtr. dr.
10—92" C & K 4x4 Box Looms
100—92" Draper Model L Auto. Looms, belt dr.
4—120" C & K (4x4) 25 harness Looms
2—60" P & W Selvage Trade Markers
1—80 inch Woonsocket 24 roll D. A. Napper
1—65" Van Vlaanderen Palmer
1—50" Morrison Triune Finishing Mach. Quetch Palmer Tenter
1—36" D & F Mixing Picker with Bramwell Weed & Spencer Oiler
1—48" C & M Mixing Picker
1—65" Voelker Rotary Cloth Press
1—42" Rice, Barton & Fales, 7-color Prtg. Mach. Dry Cans, etc.
1—43" Rice, Barton & Fales 8-color Prtg. Mach. Dry Cans, etc.
1—54" Textile Mach. Co. 8-color Prtg. Mach. complete with 2—G.E., 35 HP mtrs.
1—52" Waldron 12-color Printing Mach., complete with Westge slip ring motor, 50 HP.
1—Nash No. 3 Hytor Pump, V-belt motor driven 3/60/220 v. with 60-brass vacuum tube
1—66" Johnson 5 cyl. Slasher
350—W & J Tenter clips, B. O. brass face
4—156 sp. Saco-Lowell 7x3½ Speeders
6—184 sp. Saco-Lowell 7x2 Speeders
71—256 sp. Fales & Jenks 2¾" and 3" gge. Spinners. Texrope drive
1—40 ft. W. & J. Stainless Clip Tenter with housing, 55 inch opening.
10—96 Spindle Draper 4" Ring, 5" Gage, Tape Drive Twisters, M.D.
2—28 Sp. F&J Novelty Twisters with mtrs.
10—96 Sp. Draper 4" Ring, 5" Gauge Twisters, tape driven, motor driven
1—108 Sp. Saco-Lowell 4½" Ring, High Speed 5½" Twister, 7-ply tape drive, belt dr.
2—120 Sp. H & B 4" Ring 5" Gauge Twisters 4-ply band drive, belt driven
1—132 Sp. Saco-Lowell, high speed 3½" Ring, 4½ Gauge Twister, 7-ply tape drive, 3-phase 3/60/220 v., motor (1924)
1—132 Sp. Saco-Lowell 3½" Eadie Rings 4½" Gauge Twister, 9-ply tape drive 3/60/220 v. motor (1924)
150—128 Sp. Fletcher Dble Deck Upstroke Twisters, 7" Sp. spacing equp. with 2-3 HP mtrs.
14—Collins Double Feed Roll Novelty Yarn Twisters: 7—160 sp.; 6—180 sp.; 1—192 sp.
1—48" C. G. Sargent Wool Washer Feed
1—50" P & W Winding & Measuring Machine
1—80 Sp. Foster Model 12 tube Winders



I DID NOT FOLLOW THRU ON MY YEAR-END CHECK-UP

IT'S an old Chinese custom, at each year's close, to check up old obligations . . .

Failure to liquidate them brings this penalty—carrying a lighted lantern everywhere, until the last obligation is cleared up. Naturally, no one likes to parade his shortcomings—so all good Chinese hasten to wipe the slate clean.

Year-end equipment check-ups—and follow-thru—should also be a must "obligation" for textile mills: examining equipment for operational defects, efficiency, suitability, etc., with an eye to both immediate and future needs. Failure to follow thru on such check-ups also carries penalties in the form of inefficient operation, lower production, high costs, loss of profits and, of special importance at this time, possible failure to deliver material vital to the war effort.

Now is the time to follow thru on your 1942 year-end equipment check-up. "MLC" offers you this quality USED textile equipment:

1. *To REPLACE worn-out or unsuitable units*
2. *To EXPAND current production*
3. *To EQUIP new branch mills*
4. *To EXPAND future production*

We can ship at once all equipment listed. IF what you need is not in stock, we will immediately canvass our industry-wide contacts for it—and probably meet your deadline for either immediate or future needs.

If you have surplus idle equipment or repair parts, release them NOW for the benefit of other mills that may be in urgent need of it. We frequently know where specific equipment can be placed immediately.

MACHINERY LIQUIDATING COMPANY

Domestic DEALERS IN QUALITY USED MACHINERY *Export*

31-33 West 42nd Street MLC **NEW YORK, N. Y.**

Telephone: PEnnsylvania 6-8014 Cable Address: "LIQUIDATE", N. Y.

Established 1926 *Also: Inspecting, Appraising, and Liquidating*

Quality Used Mill Machinery for Cotton, Silk, Rayon, Wool; Bleaching—Dyeing—Finishing

SEARCHLIGHT SECTION

WE OFFER FOR SALE

New SILVER KING 12" x 36" Vulcanized Fibre Roving Cans in quantity lots.

33—DRAPER TWISTERS, 200 spindles each, 3" gauge, 2¼" ring, tape driven; equipped with separators—1922-1924 model. Excellent condition.

A. F. FYANS

Textile Machinery

P. O. Box 454 Fall River, Mass.

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Knitters: Ribbers: Loopers:
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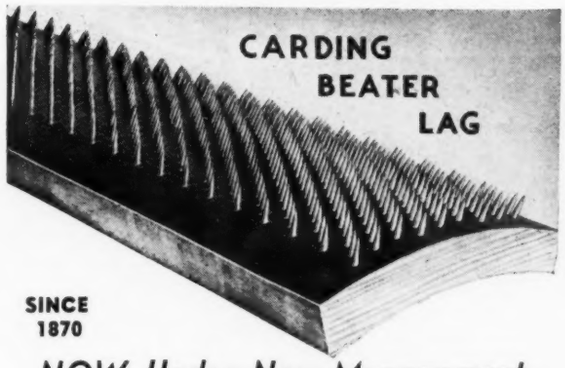

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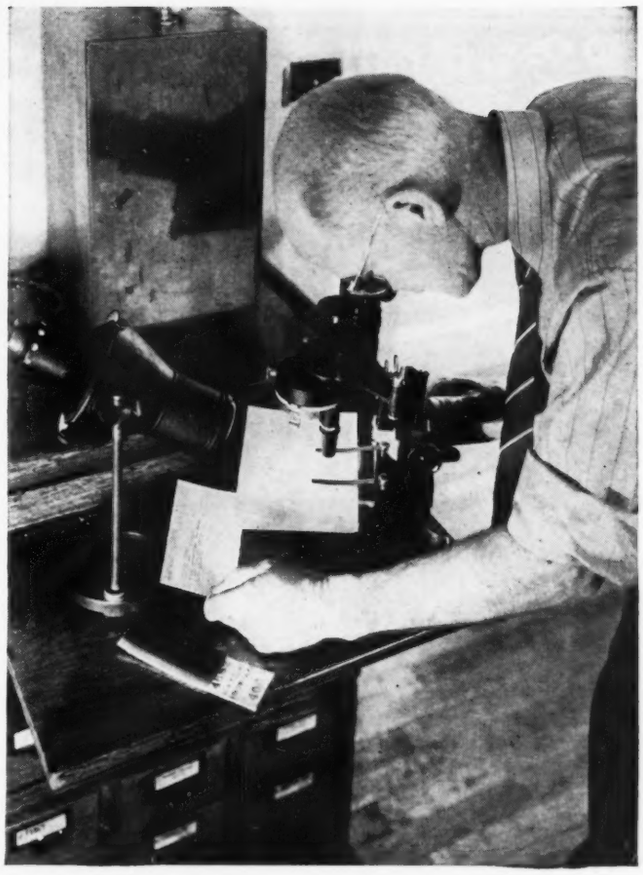

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We take pride in the quality of Wissco Card Clothing. We make it so carefully that customers find it *lasts*, and cuts operating costs. That's why Wissco customers keep coming back for more.

For instance, first an expert card setter runs off a test sample to your exact specifications. This is checked against your order.

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It is then ground on the finest and most modern type of machines in this industry.

And finally comes complete inspection. Formed and ground staples are examined under a microscope . . . and every inch of the completed card clothing is inspected individually by hand.

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CARD CLOTHING
WISSCO PRODUCTS

Regimented—

The A. B. C. Traveler
SPINNING—TWISTER

and marching to war

UNIFORMITY is a byword of the textile industry's biggest customer these days—Uncle Sam.

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Carter Travelers are regimented for absolute uniformity, micrometer accuracy, weight and quality.

More mills are today buying more Carter Travelers than ever before —for that reason.

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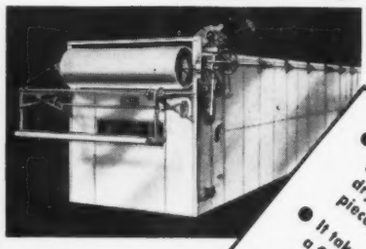

- This is a completely new type of automatic loop or festoon dryer for drying dyed or finished piece goods without tension.
- It takes goods as it comes out of a finishing quetch, or in the case of dyed goods, from a truck.
- The material is carried through the dryer while heated air, circulated at high velocity by fans of special Proctor design, is directed down into each loop.
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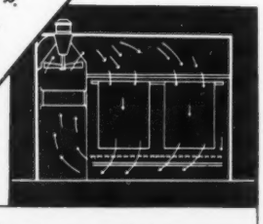
- The New Proctor Loop Dryer assures perfectly uniform results and offers unheard-of capacity in a very compact unit.



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FOR TEXTILE MILLS

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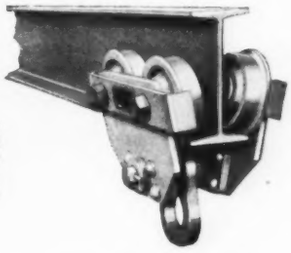

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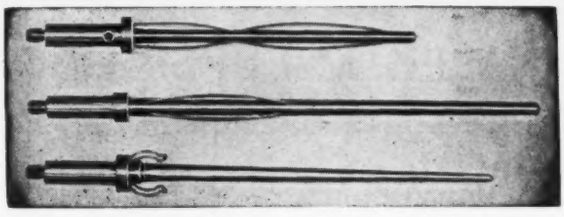

The above cut shows three types of Cop and Quill Spindles which we make for the silk trade.

Cop and Quill Spindles are made up to your individual requirements, according to size and type, to correctly fit your cops and quills.

The spindle on the bottom is equipped with an adjustable collar. By moving this collar in or out on the spindle it is possible for you to use, within certain limits, quills of different lengths.

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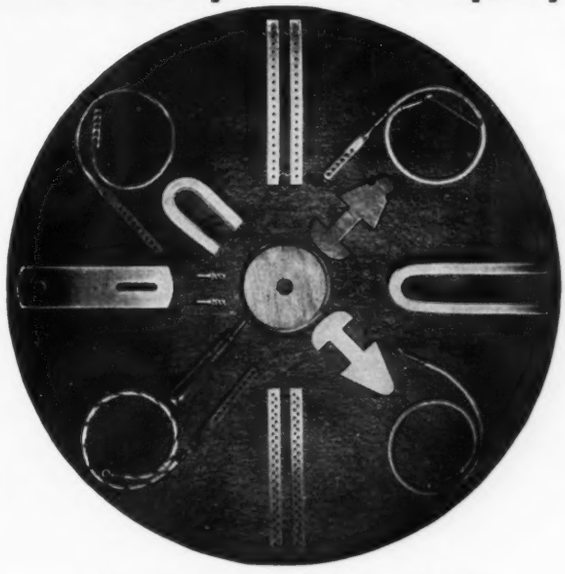

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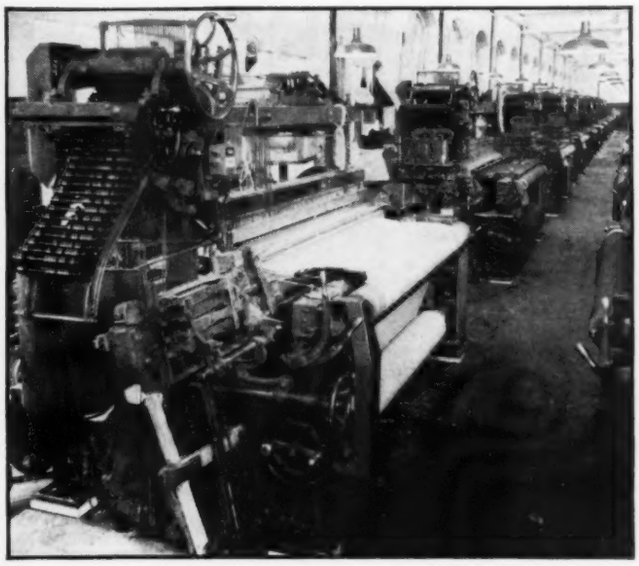


Laid in 1905 in a Lowell, Mass., weave room, this Maple floor shows scant signs of wear. Looms mounted on Felters Unisorb, without bolts or lag-screws.

It's NORTHERN HARD Maple Of Course

In hundreds of textile mills, floors of Northern Hard Maple are rolling up records—for long life, sturdy resistance to wear, low cost of upkeep. The Lowell, Mass., floor pictured above, demonstrates again the long life of Hard Maple in textile mills.

A Maple floor is modern! Warm, dry—it increases worker-efficiency. Its tough, non-dusting surface protects machinery. Mill traffic moves easily over its hard smoothness!

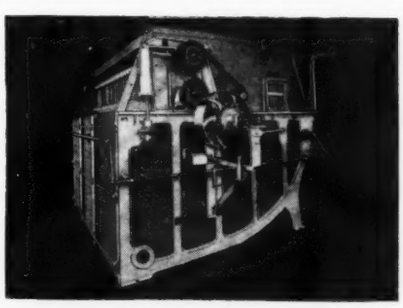
Correctly finished, brushing alone cleans a Hard Maple floor. This smooth, tight-grained wood is non-lint-catching. Better working light is reflected by its bright, clean surface. Consider carefully these many advantages of Northern Hard Maple whenever you're planning new floors or reflooring. Specify **MFMA** (trade-marked, guaranteed) Northern Hard Maple. *Ask your architect!*

MAPLE FLOORING MANUFACTURERS ASSOCIATION
1793 McCormick Building, Chicago, Illinois

Write for folder on heavy-duty finishes for old or new Maple floors, which further reduce cleaning costs. See Sweet's, Sec. 11/82.

Floor *with* MFMA Maple
REG. U. S. PAT. OFF.
(NORTHERN HARD)

Plastic Top "YANKEE CLIPPER" WASHERS



AN outstanding machine for washing woolens, worsteds, knit goods, felts, etc., the "Yankee Clipper" is now supplied with a plastic top construction that saves money, maintenance cost AND critical materials. A prewar design, it proves especially valuable today in saving vital materials.
"Yankee Clipper" Washers have many patented features that set a new standard for wet finishing efficiency. They wash and rinse faster, better, with less power and more control. Size for size, they nearly double the capacity of older style machines.

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RODNEY HUNT

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66 Mill Street Orange, Massachusetts U. S. A.

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